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Bureau of Land Management

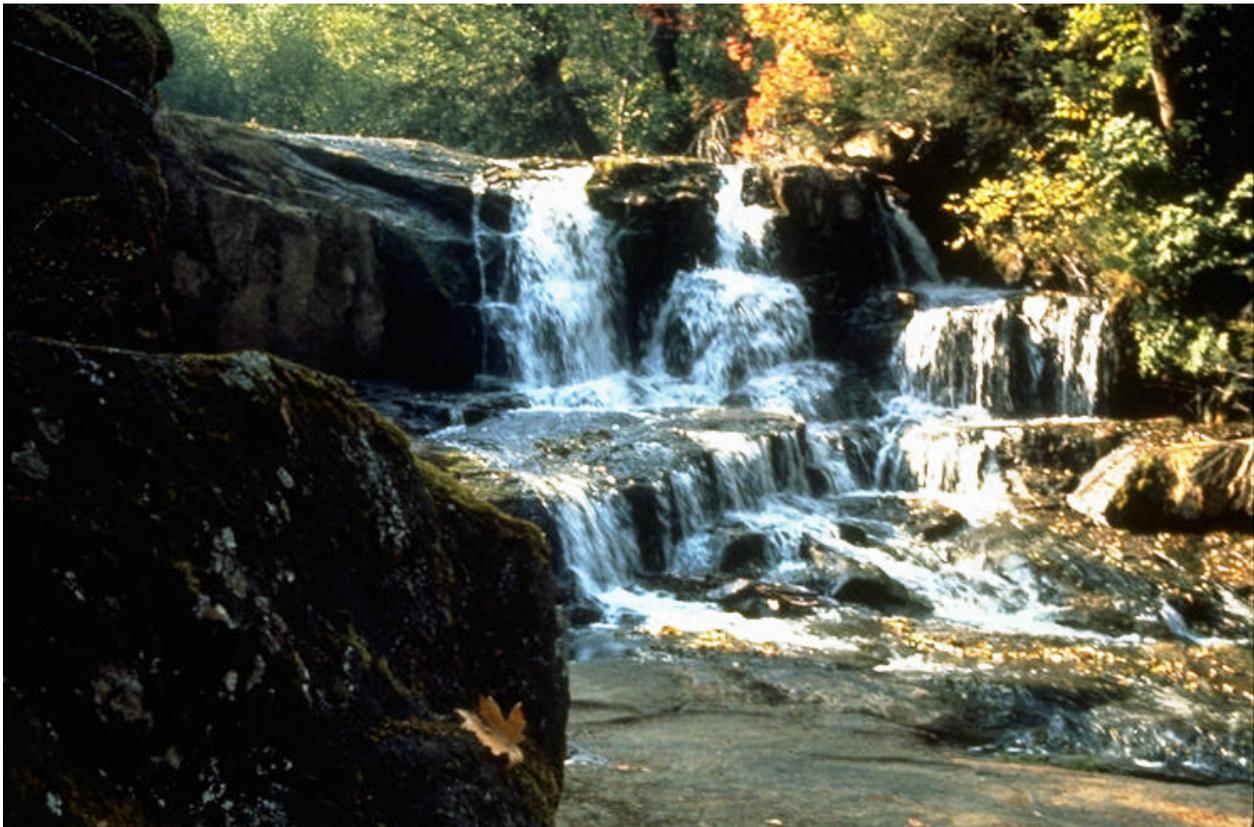
Salem District Office  
1717 Fabry Rd. SE  
Salem, Oregon, 97306

February 1999



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# ***1998 Annual Program Summary for the BLM Salem District***



Alsea Falls

The Annual Program Summary (APS) is required by the Salem District Record of Decision and Resource Management Plan (ROD/RMP). The APS reports progress of ROD/RMP implementation in the Salem District. It summarizes the results of the district implementation monitoring accomplished in accordance with the district monitoring plan. It also documents RMP maintenance that has been accomplished to date.

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## A Message from the District Manager

I am proud of district accomplishments. We completed numerous riparian, road, recreation site and Late Successional Reserve restoration projects. We met our district timber ASQ (allowable sale quantities). We completed 100% of the needed silvicultural projects. The employees of the district deserve the credit for accomplishing these goals in spite of workforce costs going up, contract and supply costs increasing, and ever increasing workloads being levied on a shrinking workforce under such stressful conditions. Some of the highlights of our accomplishments should be shared.

September 26, 1998, marked the grand opening of Cascade Streamwatch, a collaborative effort by BLM, U.S. Forest Service, the non-profit educational organization Wolfree Inc., and 50 other agencies and private corporations, to develop a comprehensive environmental education program focusing on watersheds and fisheries. Cascade Streamwatch, located at Salem BLM's Wildwood Recreation Site east of Portland, has hosted 8,000 school children since 1994.

The district offered over 44 million board feet of timber, with a value of \$11.7 million, and 662 special forest products contracts were issued generating \$46,000 in revenues.

Twenty-five Jobs-in-the-Woods projects, totaling \$1 million, were completed. The projects included stream enhancement, riparian improvement, road improvements, water sampling, native seed collection and forest ecosystem enhancement. Contracts to repair 1996 flood damage to main access roads and other important roads were completed. Projects such as timber sales, road improvements, stream habitat projects etc. were monitored to ensure that they met the requirements of the Northwest Forest Plan guidelines.

Four watershed analyses totaling 32,948 acres were completed. As of September 30, 1998, 215,020 acres representing 52% of the district's 410,446 acres were covered by watershed analyses. Ten watershed analyses totaling 108,131 acres are currently in progress and are expected to be completed in FY99.

BLM and Forest Service signed agreements with the city of Sandy and several other water providers to address their water quality concerns associated with resource management projects on federal lands.

The Congressionally mandated Mt. Hood Corridor land exchange with Longview Fiber was completed as well as a land exchange bordering Wildwood Recreation Site.

Phase 2 of the Recreation Fees Demonstration Project, a per car fee for entrance to the headland, was enacted at Yaquina Head Outstanding Natural Area. All fees collected will remain at the site for operations and maintenance. Nine thousand school children were given presentations at the Yaquina tide pools and the interpretive center.

One thousand two hundred volunteers contributed nearly 54,000 hours of work to the Salem District for a dollar value of about \$351,000.

We continued to monitor the implementation of the Northwest Forest Plan and the District Resource Management Plan, at province and district levels. The monitoring demonstrates that a very large

majority of our actions met all implementation standards perfectly. We were able to identify some problem areas which we have corrected. We have found that the monitoring program is an important and integral part of our adaptive management concept within the district.

I sincerely appreciate the efforts by district personnel to implement the Resource Management Plan in a professional manner. They have shown that we can implement the plan in accordance with the Standards & Guidelines. Congratulations on a job well done!

I also want to express my appreciation for the public participation in the implementation of the Northwest Forest Plan. Representatives of many types of groups have been involved in various aspects of implementation, including environmental organizations, industry groups, special interest groups, county commissioners and state organizations, business interests and individual citizens. Many have been involved in the Province Advisory Councils (PACs), Community Economic Revitalization Teams (CERTs) and watershed councils. They volunteered their valuable time to advise federal managers on their concerns, provide different perspectives on issues dealing with forest plan implementation and, in many cases, completing actual on-the-ground work.

Van Manning  
District Manager

**Table 1 - Salem RMP, Summary of Renewable Resource Management Actions, Directions and Accomplishments**

<b>RMP RESOURCE ALLOCATION OR MANAGEMENT PRACTICE OR ACTIVITY</b>	<b>FISCAL YEAR 1998 ACCOMPLISHMENTS</b>	<b>CUMULATIVE ACCOMPLISHMENTS 1995-1998 Timber 1996-1998 Others</b>	<b>PROJECTED DECADAL PRACTICES</b>
Regeneration harvest (acres offered)	650	1884	5558
Commercial thinning/ density management/ uneven-age harvests (acres offered)	557	2822	9113
Site preparation - burning(acres)	330	914	4800
Site preparation - other (acres)	454	664	5900
Plantation Maintenance / Animal damage control (acres)	1902	7250	31300
Pre-commercial thinning (acres)	1177	5719	29700
Brush field/hardwood conversion (acres)	0	0	900
Planting/ regular stock (acres)	333	1213	4800
Planting/ genetically selected (acres)	186	619	4500
Fertilization (acres)	1671	1671	6000
Pruning (acres)	169	228	None
New permanent road const. (miles*)	3.6	12.3	5
Roads fully decommissioned/ obliterated (miles *)	4.0	26.5	No Target
Roads closed/ gated (miles**)	30.0	130.2	No Target
Timber sale quantity offered (mm board feet)(ASQ)***	44.368	123.314	348.1
Timber sale quantity offered (mm cubic feet)	7.4	20.4	57
Noxious weed control, chemical (sites/acres)	1/1	1/1	As Needed
Noxious weed control, other (sites/acres)	8/87	18/176	As Needed

\* Bureau managed lands only; \*\* Roads closed to the general public, but retained for administrative or legal access

\*\*\* Volume reported from RMP signing date May 1995 to present

**Table 2 - Salem RMP, Summary of Non-Biological Resource or Land Use Management Actions, Directions and Accomplishments**

<b>RMP RESOURCE ALLOCATION OR MANAGEMENT PRACTICE</b>	<b>ACTIVITY UNITS</b>	<b>FISCAL YEAR 1998 ACCOMPLISHMENTS</b>	<b>CUMULATIVE ACCOMPLISHMENTS 1995-1998</b>
Realty, land sales	(actions/acres)	4 / 9.49 Acres	14 / 15.29 Acres
Realty, land exchanges	(actions/acres acquired/disposed)	2 / 3621 Acres	7 / 4524 Acres
Realty, R&PP leases/patents	(actions/acres)	1	4
Realty, road easements acquired for public/agency use	(actions)	0	11
Realty, road rights-of-way, permits or leases granted	(actions)	1	5
Realty, utility rights-of-way granted (linear/areal)	(actions/miles/acres)	7	19
Realty, withdrawals completed	(actions/acres)	0	0
Realty, withdrawals revoked	(actions/acres)	0	0
Mineral/energy, total oil and gas leases	(actions/acres)	0	0
Mineral/energy, total other leases	(actions/acres)	0	0
Mining plans approved	(actions/acres)	0	0
Mining claims patented	(actions/acres)	0	0
Mineral material sites opened	(actions/acres)	0	0
Mineral material sites, closed	(actions/acres)	0	0
Recreation, maintained off highway vehicle trails	(units/miles)	1 / 25	1 / 25
Recreation, maintained hiking trails	(units/miles)	12 / 75	30 / 225
Recreation, maintained sites	(units/acres)	12 / 800	36 / 2400
Cultural resource inventories	(sites/acres)	4 / 1908	13 / 9449
Cultural/historic sites nominated	(sites/acres)	0 / 0	0 / 0
Hazardous material sites	(identified/cleaned)	3 / 3	16 / 13

**ANNUAL PROGRAM SUMMARY and MONITORING REPORT**  
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## **1. INTRODUCTION**

The Annual Program Summary (APS) is published annually, as required by the district Resource Management Plan (RMP). It tracks and assesses the progress of plan implementation, reports monitoring results, and may include periodic plan maintenance. The FY98 APS is unique, in that it will be used as a source of information during the third year evaluation of the RMP in February 1999. For that reason, there is cumulative information covering the periods of 1995-1998 for many of the programs discussed in the APS. Most information needed for the third year evaluation is included in the text, tables or appendices of this APS. There is additional detailed information available in background files and data bases within the district office.

## **2. BUDGET**

### **A. Normal appropriated budget & trends**

Total District Budget has been in the range of \$14-16 million. Limitations have been in having sufficient workforce and the appropriate skills to accomplish workloads. The adequacy of the budget, however, is on a downhill trend. While the budget total remains somewhat level, personnel costs are increasing. This translates into less money for project work or for overhead and miscellaneous costs.

### **B. Jobs-In-The-Woods funds**

The 36 projects for FY98 were located across 11 counties within 4 congressional districts and accounted for \$1,082,000 in project dollars.

### **C. Timber Sale Pipeline Funds - Forest Development and sales**

In May of 1998, funds were made available to do work on "pipeline" timber sales. These are future, or out year sales, sales that would not be sold until the year 2000 or later. The purpose of these funds is to develop one years worth of timber sales that are completely prepared and "on the shelf", ready to be offered. Having these sales available, and in the "pipeline", will give us more lead time to react to late developing issues that might delay sales in the current year.

In the Cascades Resource Area, the emphasis in FY 1998 was in developing out year timber sale plans and selecting sales that would be "pipeline sales". Timber sales containing approximately thirty Million Board Feet were identified. These sales would be prepared for sale in the years 2000 through 2002. Updates of the GIS Hydrology theme were contracted for the areas where pipeline sales are anticipated to be located.

In the Tillamook Resource Area planning, survey and inventory work, interdisciplinary team work and lay out was done on 900 acres for sales that will result in eleven million board feet of timber. These sales are planned for the years 2000 and 2001 and are in LSR, AMA and GFMA lands

### **D. Recreation Pipeline Funds - Projects**

During FY98, additional appropriations were provided by Congress to accomplish needed recreation maintenance, repairs and improvements which had gone undone due to reduced funding over several years. These were referred to as the "Recreation

Pipeline” funds and Table 3 shows how district utilized them.

**Table 3 Recreation Pipeline Projects FY98**

Project Areas	Types of Work	Dollars Expended*
Wildwood Recreation Site	Restroom repairs and ADA improvements; electric, water and irrigation repair; storage building repair; paving of roads, parking lots, table and sign replacement.	\$260,000
Fisherman’s Bend Recreation Site	Replace volunteer housing.	\$106,000
Little North Santiam SRMA (Elkhorn Valley Site)	table, bbq, and sign replacement.	\$3,000
Yellowstone SRMA (Yellowbottom Rec. Site \$ Quartzville WSR)	Restroom replacement for ADA, paving of roads, parking lots and trails, repair of volunteer host site.	\$148,250
Nestucca River SRMA (4 Campgrounds and Sheridan Peak Overlook)	Case & Cap wells, install solar pumps, fencing, toilet replacement, Back-country Byway repairs.	\$167,390
Marys Peak ERMA (Alsea Falls Rec. Site)	Storage building security system.	\$10,000
Larch Mtn. Environmental Education Site	Upgrade parking area, toilet and trail for ADA.	\$43,000

\* Costs include administrative overhead / labor costs.

## **E. RECREATION FEE DEMONSTRATION PROJECT**

In 1996, the Fee Demonstration Program was authorized by Congress. The program expanded the Bureau of Land Management's authority to charge and retain fees for providing recreation services and facilities on a trial basis until September 30, 2002. Yaquina Head Outstanding Natural Areas has been a fee demonstration site since October 1, 1996. Starting October 1, 1997 all of the developed recreation sites in the Salem District became a fee demonstration site. Over \$237,909 in recreation facility fees were collected in fiscal year 1998. With the support of the Association of O & C Counties, all of these fees are being retained at the district to be used for visitor facility repair and maintenance, accessibility improvements, visitor services, improvement, replacement of signs and environmental interpretation and education. All of the developed recreation sites will remain fee demonstration sites until the authorization expires, at which time Congress may extend the authority or pass new legislation.

## **F. CHALLENGE COST SHARE PROJECTS, VOLUNTEERS, PARTNERSHIPS**

In FY 1998 the district cooperated in nine (9) Challenge Cost Share projects that involved approximately 50 different partners. Partners included federal, state and local government agencies, private corporations, conservation organizations, individuals and local watershed councils. Grants totaling \$97,600 were leveraged with nearly \$500,000 worth of funding and value-in-kind contributions from partners. These projects included monitoring of sensitive fish production; monitoring of sensitive plant populations and genetics; invertebrate inventories; cooperative management of Wild and Scenic River corridors; water quality monitoring and education; and Cascade Streamwatch (a multi-partner cooperative for aquatic education). Partners in these projects included: Oregon Department of Fish and Wildlife, USDA-Forest Service, Oregon State University, Berry botanic Gardens, The Nature Conservancy, PGE/Enron, Oregon Watersheds, Santiam (Mill City), Cascade (Turner), Jefferson and Stayton High Schools, City of Salem, Oregon Department of Environmental Quality, AT&T, Portland Water Bureau, Timberline, Inc., Willamette Industries, Web Steel, Collins Foundation, Resort at the Mountain, Inc., NW Natural Gas, US Bank, Pacificorp, Wells Fargo, NIKE, US Fish and Wildlife Service, Portland Parks, Portland State University, Mt. Hood Community College, Metro, Trout Unlimited, Defenders of Wildlife, Audubon, Americorps, Steelheaders, Oregon Parks and Recreation Department., Oregon State Patrol, Clackamas/Sandy Stewardship Fund, Clackamas County, Multnomah County, Metro, Cities of Sandy, Canby and Estacada, Oregon Trout, and others.

One of the most successful cooperative partnerships is the science-based and award-winning Cascade Streamwatch science-based education program operated at the Wildwood Recreation Site along the Salmon Wild and Scenic River. For every dollar contributed by the BLM in FY97, partners contributed \$10, with a total expenditure in FY97 of about \$450,000. FY98 expenditures increased to a total of over \$500,000, with an increased rate of participation by partners (about \$12 contributed for every BLM dollar).

The Volunteer program continued to be very successful. One thousand two hundred volunteers contributed nearly 54,000 hours to the district during FY98, for a dollar value of nearly \$351,000 based on minimum wage estimates. Overall BLM costs to support the volunteer program was just over \$113,000. This calculates to a net value to the BLM of about \$238,000, equivalent to 2% of the total district budget. These volunteers contributed work in a wide variety of programs, none of which we would accomplish with BLM funds. Without the volunteers, the work would not have been done. In some cases the volunteers want experience for future jobs. In other cases, the volunteers want to merely contribute toward a worthwhile project. Recreation programs reap about 59% of the volunteer hours, with biological programs, environmental education, support services and surveying get the remainder.

### 3. Land Use Allocations (LUAs)

Several adjustments and corrections of acreages within land use allocations have occurred since approval of the Resource Management Plan. Acreages were affected by the following:

- District Boundary adjustment - A boundary adjustment with the Eugene BLM district caused a change in acreages in the land use allocations. No LUAs were changed.
- Update of the Land Use Allocation theme within the GIS system - Minor adjustments of the GIS theme to properly mesh with other themes caused minor acreage changes. These primarily occurred with update of the Land Ownership theme. No LUAs were changed.
- Land exchanges and congressional actions. LUAs for acquired lands were consistent with the purpose for which they were acquired or with the management objectives for adjacent BLM lands.
- Identification of LSR boundaries for the unmapped LSRs required for pre-1994 known owl sites (which were not mapped or accounted for in the RMP LUA acreages) and all occupied marbled murrelet sites outside of mapped LSRs. LUAs were changed as required by the Northwest Forest Plan (NFP) (C-10) and RMP (pg 32)

**Table 4 - Revised acreages within LUAs within the Salem district <sup>1</sup>**

Major Land Use Allocation	Acres in RMP ROD	Acres after update before removing "unmapped" LSRs (owl,MM)	Acres after update after removing "unmapped" LSRs (owl,MM)
Late-Successional Reserves Outside of the Adaptive Mgt. Area (LSR)	132,100	133,557	135,366
Late-Successional Reserves Inside of the Adaptive Mgt. Area (AMR)	79,700	80,426	80,810
Adaptive Mgt. Area (AMA)	43,700	41,899	41,516
General Forest Mgt. Area (Matrix)	107,300	105,661	104,804
Connectivity / Diversity Blocks (Matrix)	27,400	27,125	26,185
Other (DDR, CR)	7,900	11,994	11,995
TOTAL ACRES	398,100	400,662 <sup>2</sup>	400,675 <sup>2</sup>

1. See RMP ROD pg 5 for original footnotes 2. Acreage differences caused by mapping & rounding

#### **4. Aquatic Conservation Strategy (ACS) Implementation**

##### **A. Riparian Reserves**

Over the last 3 years there have been 24 NWFP harvest actions in Riparian Reserves on the district. Most (8) of the actions consisted of negotiated Salvage Sales of blowdown early in the plan implementation (1996) and after a significant storm event. Of the 24 actions, 7 had been selected for implementation monitoring. Results from this monitoring indicate that documentation of ACS objectives may have been lacking in the 1997 actions. This was noted in last year's annual reporting. In 1998, all actions provided clear documentation on how the activity would meet or would not prevent attainment of ACS objectives.

During the past 3 years there has been 51 projects involving placing structures and improvements (culverts, roads, bridges, etc) in riparian reserves. These actions involve road maintenance, road restoration, culvert replacement and slide repairs in response to the 1996 flood. The influence of roads on the ACS is identified in watershed analysis. Interdisciplinary (ID) teams consisting of specialists and road engineers determine the priority for obliteration considering short and long term needs. About 26 miles of road have been obliterated on the district over the last 3 years.

As the flood of 1996 illustrated, accommodation of flow is not the primary mechanism of culvert and crossing structure failure (see BMP section). Inventory of road crossings after the flood of 1996 confirmed that debris and bedload are primary sources of structure failure. Over the past three years, most structures were replacements for those damaged in the flood of February 1996. The emergency nature of the replacement, site limitations, technical restrictions and monetary limitations allowed upgrade of structures to accommodate 100 year flow but not necessarily redesign to account for associated bedload and debris. Some high risk crossings were upgraded to accommodate the bedload and debris flows. Normal replacement of structures on the district in the future will be designed to accommodate the 100 year flood in terms of flow, bedload and debris.

During flood repair it was standard procedure to insure all structures on streams with fish were designed for fish passage. In terms of roads, these blockages have often occurred where there are old log culverts. Scott Creek log fill removal (1996) and Blackrock log culvert removal (1998) are successful examples of restoration for fish passage by replacing log culverts.

In the last 3 years there has been 12 recreational facility projects occurring in Riparian reserves. This included 3 trail construction and maintenance projects, 2 parking lot projects, 2 restroom upgrades, 2 foot bridge upgrades, a kiosk, and the Cascade Streamwatch Project (1998). Six (6) of these projects have been monitored with results concluding that overall ACS objectives for the projects were documented in NEPA documents. Most were designed so as not to prevent meeting ACS objectives the remainder were found to have no effect. In 1998 a notable recreational structure in a riparian reserve was the Valley of the Giants footbridge.

There have been 27 prescribed burns adjacent to riparian reserves. Eleven of these were monitored and in all cases riparian reserves were designed and implemented such that none were entered by fire. Sixteen of the total 27 prescribed burns adjacent to Riparian Reserves occurred during FY 1998. Significant reduction in the use of mechanical site preparation has been noted over the last 3 years with no record of any equipment entering riparian reserves.

## **B. Key Watersheds**

Tier 1 Key Watersheds were identified in the Northwest forest plan to serve as refugia for at-risk stocks of anadromous salmonids and resident fish species. Tier 2 Key watersheds were identified as important sources of high quality water. The NWFP calls for application of specific management actions involving watershed analysis, roads, restoration and timber harvest in key watersheds.

In the last three years there has been 11 timber harvest projects in Key Watersheds, six salvage operations and five density management thinnings. No regeneration harvest has occurred in Key Watersheds. Three of the salvage projects consisted of negotiated Salvage Sales of blowdown in response to the effects of the February 1996 storm event. Much of this work was involved with road clearing. There were 3 density management thinnings in Key watersheds in 1998 compared to only 2 thinning projects in 1996 and 1997.

In Tobe Creek and the Upper Nestucca Key Watersheds there has been a net reduction of 8.5 road miles. The remaining Key Watersheds have experienced no net gain in roads. Over the last 3 years there has been a total of 26 miles of roads obliterated and 128 miles of road closed (gated/bermed), many in key watersheds(See Appendix 12).

Appendix 12 provides a summary of 1998 restoration projects in Key Watersheds. For the last three years restoration efforts in Key watersheds have largely focused on riparian enhancements (planting and maintaining conifer seedlings), particularly in Upper Lobster Creek and Upper Nestucca River. Road restoration has largely involved culvert replacement specifically to repair flood damage. Implementation Monitoring records show there were 69 restoration projects completed over the last 3 years, 46 of them occurring in key watersheds. See further discussion in section 4D.

## **C. Watershed Analyses**

Watershed analysis is required by the Northwest Forest Plan (NFP) Record of Decision (ROD). The primary purpose is to provide decision makers with information about the natural resources and human uses in an area. This information will be utilized in National Environmental Policy Act (NEPA) documentation for specific projects and to facilitate compliance with the Endangered Species Act (ESA) and Clean Water Act (CWA) by providing additional information for consultation with other agencies.

Watershed analyses include:

- \* Analysis of at-risk fish species and stocks, their presence, habitat

- conditions and restoration needs;
- \* Descriptions of the landscape over time, including the impacts of humans, their role in shaping the landscape, and the effects of fire;
- \* The distribution and abundance of species and populations throughout the watershed;
- \* Characterization of the geologic and hydrologic conditions.

This information was obtained from a variety of sources, including field inventory and observation, history books, agency records and old maps and survey records.

Watershed analysis proceeded at a consistent pace. Four analyses were completed during FY 98. Close coordination occurred between the district and adjacent national forests to assure that watershed analysis in areas of joint ownership had appropriate participation from both agencies. Normally, the lead agency was the one with the majority of land ownership in the watershed. Public involvement and review was also integral to watershed analysis. The status of watershed analyses is shown in Table 5 and the accompanying list.

**Table 5- WATERSHED ANALYSIS STATUS**

	Watershed Analysis Areas	Number of key watersheds	BLM Acres	Percent of total acres
Completed through FY98	32	14	215,020	52%
Ongoing FY99	10	2	108,131	26%
Remaining FY2000+	24	1	86,578	22%
Total	66	17	409,729	100%

**Watershed analyses completed through FY 98 include:**

**COAST PROVINCE**

Drift Creek (Alsea) River	Drift Creek (Siletz)	East Fork Nehalem
Nestucca River	North Fork Alsea	South Fork Alsea
Upper Siletz	Yaquina/Big Elk	Five Rivers / Lobster
Yachats	Middle Fork of the North Fork Trask River	
Netarts/Sand Lk.Fr.	Little Nestucca	

**WILLAMETTE PROVINCE**

Abiqua Butte	Eagle Creek	Hamilton Creek
North Fork Clackamas	Upper Clear Creek	Upper Sandy
Salmon River	Scappoose Creek	Shot
Pouch(S.Santiam)		

Thomas Creek	North Yamhill	Benton Foothills
Bull Run / Little Sandy	South Fork Clackamas	Lower Clackamas
Upper Fish Creek	Collawash	Little North Santiam
Combined - Willamina Creek, Panther Creek, Baker Creek, Deer Creek and South Yamhill(part)		

**Watershed analysis ongoing or proposed in FY 99 include:**

**COAST PROVINCE**

Kilchis River	Lower Alsea	Upper Salmon
Rock (Siletz)		

**WILLAMETTE PROVINCE**

Molalla River	Rock (Tualatin)	McFee
Combined - Luckiamute River, Rickreall Creek, Mill Creek, South Yamhill River(part)		
Dairy / McKay	Scoggins / U.Tualatin	

**D. Watershed Restoration Projects**

Watershed Restoration is a long-term program to restore watershed health and aquatic ecosystems, including the habitats supporting fish, other aquatic and riparian organisms, and water quality. The most important components are control of management related runoff and sediment, restoration of desired riparian vegetation and instream habitat complexity. Instream restoration is covered in section 11.

The District has conducted approximately 82 restoration projects over the last 3 years. The need for re-establishment of conifers in the hardwood dominated riparian zones was recognized as a key component to long term Large Woody Debris (LWD) recruitment . The flood of February 1996 required restoration of stream crossings, primarily in the Quartzville and Molalla watersheds.

**1) Road Restoration / Obliteration**

As funding becomes available and/or restoration projects are identified, roads in the transportation system are being taken out of service by either closing or obliteration (See Table 1 and Appendix 12). The transportation management plan and transportation management objectives (TMOs) play a key role in this identification. Taking a road out of service may be as simple as installing a gate at the front end of the road, but could be as complex as completely removing the road by obliteration. Other projects included road restoration to control and prevent resource damage. Culverts are being replaced where they do not to meet the requirements of the Aquatic Conservation Strategy.

**2) Riparian Habitat Enhancement**

Over the past 3 years, most of the conifer restoration work can be placed into two categories: those projects targeting riparian reserve enhancement and those which are upland silvicultural treatments which enter the riparian reserve. The District's conifer restoration work has centered in Upper Lobster Creek and South Fork Alsea River (Alsea Basin) and within the Upper Nestucca watershed. In 1998 this was expanded to

Crooked Creek in the Upper Alsea drainage. Most of these riparian areas were dominated by hardwoods, so an intensive program of planting, brushing, and matting of diverse conifer species has occurred. In the second category are numerous thinnings and manual maintenance (brushing) of existing conifer stands with the intention of promoting existing conifer by controlling competition. These have occurred throughout the district as part of our silviculture program.

## **5. Late-Successional Reserves and Assessments**

All habitat manipulation activities in LSRs during FY98 were covered either by initial LSR assessments or full LSR assessments completed in accordance with the RMP and NFP.

### **Assessments completed in FY98**

Three LSR assessments were completed in FY98. One LSR assessment, titled "Late Successional Reserve Assessment, Oregon Coast Province- Northern Portion", was finalized jointly by the Siuslaw National Forest and the Salem District. This assessment covered two designated LSRs (RO 267 & OR 268) totaling 546,252 acres of federal land in the north half of the Oregon Coast Province. The assessment area generally encompassed the area of the Northern Coast Range Adaptive Management Area. It ranges from the Yaquina river drainage on the south to the Wilson and Kilchis River drainage in the north, and between the Pacific Ocean and the Willamette Valley. The LSR assessment directed the agencies to jointly develop a management strategy for the designated Reserve Pair Areas (RPAs) within the area. This work began but was not completed in FY98.

During FY98, the district also completed two LSR assessments with Mt. Hood National Forest and Willamette National Forest covering the east side of the district. The North Willamette LSR assessment (OR 208, RO 209, & OR 211) totaling 30,820 acres of BLM lands was completed in July 1998, and the Mid Willamette LSR assessment (OR 212, OR 213, & OR 246) totaling 32,790 acres of BLM lands was completed in August 1998. All the large LSRs in the district are now covered with a final LSR Assessment.

## **6. Northern Coast Range Adaptive Management Area Activities**

**A. AMA Guide:** The Northern Coast Range AMA Guide was published in January, 1997 and distributed to government offices, libraries, schools, and interested citizens. The Guide, a joint USFS-BLM effort, (1) meets the requirement for an AMA plan, (2) explains why we have AMAs, (3) provides a vision for the future, (4) summarizes area history and present conditions, and (5) defines a framework for future work. The most important function of the Guide is to inform our partners and stakeholders and to motivate them to participate in planning, implementing, and monitoring AMA programs.

**B. Social Assessment:** A Social Assessment for the AMA was completed in June of 1997. BLM, Forest Service, Oregon Department of Forestry, and many other agencies and organizations cooperated in gathering information for this document. Agency managers and staff will be able to use this assessment to better identify the likely social and economic effects of proposed actions. Thus, it will help the agencies to make decisions that consider the social environment of local communities as well as the expected biological and physical effects of each action.

**C. Research and Learning Assessment:** A Research and Learning Assessment was completed and distributed in October of 1998. This document was prepared to

explore the issues, questions, and alternatives facing forest managers in the AMA, and to review past and current research efforts in the area. This will provide the building blocks for development of studies and management programs to guide future learning.

**D. Province Advisory Committee:** AMA staff members continue to work closely with the Coast Range Province Advisory Committee (PAC) and the PAC's AMA subcommittee. The subcommittee has studied a number of current issues facing federal land managers, and has brought specific recommendations to the PAC. Local BLM and Forest Service office staff have initiated several programs in response to those recommendations.

**E. Local Watershed Councils:** AMA staff participates monthly with the Nestucca/Neskowin Watershed Council and the Yamhill Basin Council. At our invitation, both of these councils established subcommittees which meet regularly to address forest land management issues in the AMA, particularly as these affect watershed values. Watershed councils provide an excellent source of creative ideas and local participation in management of the AMA.

**F. Collaboration with Tribes:** Staff of the Siuslaw National Forest and Salem District BLM have taken part in a series of meetings with officials of the Confederated Tribes of the Grand Ronde Community exploring the concept of integrating management of Federal and Tribal lands within local watersheds by means of a Collaborative Stewardship Agreement. Such an arrangement may offer a variety of benefits, such as greater coordination of forest management at an ecosystem level, increased involvement of local communities, more effective use of resource management staff, ability to accomplish more beneficial projects, and potential innovation in management practices.

**G. Landscape Design Study:** On the recommendation of the Coast Range PAC, staff of the PNW's Corvallis Research Lab, Siuslaw National Forest Service, and Salem District BLM have been laying the groundwork for a large-scale, long-term adaptive management design study. This program will test the effectiveness of three markedly different management strategies in promoting development of mature and old-growth forest on large blocks of the landscape. All management strategies to be tested are designed to promote maintenance and enhancement of late-successional forest ecosystems, pursuant to the Northwest Forest Plan.

## **7. Matrix - Retention of Late Successional forest patches - 15% Analysis**

The NFP/ROD (pg C-44) and ROD/RMP (pg 48) require that BLM and USFS provide for the retention of late successional / old growth fragments in the matrix where little remains. The standards and guidelines are to be applied to any fifth field watershed in which federal forest lands are currently comprised of 15 percent or less late-successional forest (LSF), considering all land allocations. All district FY 95-98 sales sold under the NFP have complied with the 15 percent rule per the initial draft analysis.

In 1996, the district completed an initial screening of watersheds with the Siuslaw, Mt. Hood and Willamette National Forests. General results were reported in the FY 97 Annual Program Summary. The initial analysis applies to all actions with decisions prior to Oct 1, 1999.

A joint BLM / FS Instruction Memorandum was issued on September 14, 1998. This provided additional guidance for implementing the 15% S&G throughout the area covered by the Northwest Forest Plan. Implementation of this guidance is required for all actions with decisions beginning October 1, 1999. A revised 15% analysis is currently in progress, but overall results will not be available for publication in the FY98 Annual Program Summary. They will be published concurrent with completion of the third year RMP evaluation in Spring 1999.

## **8. Air Quality**

Air quality continues to be a major emphasis item on the district. During FY 98 special care was taken to ensure that all prescribed fire projects were done in compliance with the Oregon Smoke Management Plan. There were no intrusions of smoke into any designated area or into any Class 1 air sheds. Experienced prescribed fire managers are doing an excellent job of writing burn plans, and then implementing those plans when good smoke mixing and dispersal exist. Prompt mop-up of burned units has also helped to reduce residual smoke.

## **9. Water and Soils**

Water and soils are extremely important and high profile issues. Water quality, both for domestic drinking and for fish habitat, is one of the highest priority programs on the district. Protection of soils to reduce sedimentation into waterways, reduce chances of landslides and otherwise enhance the productivity of our lands is closely associated with the water quality issues. Following are discussions of some of the more visible aspects of these programs.



South Fork Alsea River



## **A. 303d Streams**

The RMP reported that there were 6 primary water bodies which were identified by the Oregon Department of Environmental Quality (ODEQ) as “water quality limited” within the district. These were located on the mainstems of drainages considerably downstream from BLM management. At that time, the only watershed with suspected forestry linkage to water pollution was on the Tualatin River. During 1996 the 303d water quality limited designation list was expanded significantly, largely due to increases in data availability (specifically water temperature) rather than increases in degradation. A full listing of these streams is available at the district office. This expansion was extensive to the point of including streams directly adjacent to BLM lands in 14 watersheds. The most prevalent listing parameter was water temperature which could be linked in part to past forest management activities on federal and other lands. In 1998 a revised 303d list included expansion of listing in Lobster Creek, Siletz River, Molalla River, Little North Santiam, Crabtree Creek, Hamilton Creek, Quartzville Creek, Thomas Creek and Turner Creek. All these watersheds include significant BLM acreage. Implementation of Riparian Reserves on BLM lands should assure that future actions do not further degrade water temperature and may contribute to recovery of some streams.

This increase in the extent and numbers of listed streams has affected management in terms of implementing a non-point source management program and the workload involved. ODEQ has set target priority dates for development of Water Quality Management Plans in the listed watersheds. In 1998 the Tillamook Resource Area (R.A.) cooperatively initiated a Water Quality Management Plan (WQMP) for the Upper Nestucca River with the USFS. ODEQ has identified the year 2001 as the completion date for the Nestucca, Wilson, Trask Sub-basin. The listings have expanded the issues addressed, the workload involved, the level of analysis in cumulative effects assessments, BMP design and the scheduling of projects. In most instances, application of NWFP riparian reserves has been the primary BMP applied during forest harvest activities for protection of beneficial uses and to avoid cumulative effects to listed segments (temperature). Re-scheduling of harvest activities has occurred in 4 watersheds (Cascades) due potential increases in flow, sediment and channel degradation.

The District provided water temperature monitoring data to DEQ for consideration in listing or de-listing 303d streams. In 1998 data from 65 temperature stations was submitted. This data and hydrologist expertise has been shared with watershed councils in an effort to cooperate with the Governor’s Plan and develop watershed-based plans. In the case of the Yamhill and South Santiam watershed councils, the district has provided equipment for obtaining water quality information.

## **B. Municipal Watersheds**

Since 1988 the BLM has had a ongoing management agreement with other private land owners in the Rickreall watershed, the water supply for the city of Dallas. Currently the agreement consists of seasonal vehicle closures on the road system. In 1998, we signed 3 Memorandums of Agreement (MOA) concerning management

within 3 watersheds: Sandy (Alder Creek), Clackamas and Molalla Rivers. These watersheds contain the municipal water supplies for the cities such as Sandy, Clackamas, Estacada, Lake Oswego, Oregon City, Molalla and Canby. There is currently a draft MOA with the city of Salem for the North Santiam River watershed. Work associated with these agreements are focused on cooperative water quality monitoring and coordination concerning management actions taking place in the watershed.

Additional MOAs are being discussed and developed with other municipal suppliers now. In response to a recent GAO report concerning the 1996 flood and the effects on the City of Salem's water supply, the BLM is incorporating GAO's recommendations whenever possible. These include: 1) Include key landowners in MOA's (when landowners desire); 2) Gather comparable data on water quality and management; 3) Include water quality as an issue in WA when there is a municipal use and; 4) Conduct watershed analysis to include the boundary of the municipal watershed.

### **C. Updated Stream Information**

In FY96 and FY97, the district was a leader in developing a statewide procedure for updating both the mapping and recording critical information about streams, lakes and wetlands on a Geographic Information System (GIS). In FY98 water bodies on over 815,000 acres were updated using this procedure. Watersheds scheduled for watershed analysis were targeted for update during this first year of implementing the procedure. The District is coordinating with adjacent forests (USFS) and the state to obtain a complete coverage for watersheds on a 5th field scale.

Over the last 3 years, we completed "on the ground" stream identification in order to test the validity of the riparian factor used in the ASQ calculations. Initial analysis in 1997 indicated that factor shortfalls were most likely to occur in the Cascades. Results from analysis of Cascade data in 1998 indicate that the riparian factor applied in the RMP was not significantly different from that derived through the field Checking project.

### **D. Modify Site Treatments**

#### **1) Minimize intensive burning**

Prescribed fire prescriptions are designed so that protection of soils and organic matter are included as an objective. The district sparingly uses prescribed fire on soils that are recognized to be unusually erodible, nutrient deficient, or low in organic matter. As a general rule, prescribed burns are conducted under spring time like conditions when large fuels, soils and duff are moist, and smaller fuels are dry. Large fuels are unable to completely burn because of their moisture content, while fine fuels burn quickly, which helps to protect the upper horizons of the soil.

#### **2) Minimize soil and litter disturbance, including reduced intensity and frequency of site treatments.**

Management actions around fragile sites (identified TPCC, RMP C-11) have primarily been implemented through identification of sites on the ground (e.g. wetlands, unstable and potentially unstable slopes), and avoidance. Project planning around these sites requires an accurate map. Over the last 3 years specialists have noted that significant

correction to the existing TPCC fragile site mapping has had to be made during the EA process particularly in terms of wetlands identification. As with the stream identification, this has expanded workload and time for planning and implementing projects.

Since 1996, there has been a marked increase in the use of feller-bunchers and forwarder/harvester operations, especially within thinning operations. This has led to concern that these rubber tired machines can cause significant compaction and disturbance. General review has indicated that when existing BMP's are implemented, such as operating during dry conditions and use of designated trails, impacts are minimized.

Since the writing of the RMP there has been a general shift in mechanical slash piling from tractor to loader/grapple piling. When grapple piling operations are carried out on dry soils and using slash to operate on, we have monitored reduced impacts to the soil surface compared to the traditional tractor piling operation. This reduction in surface disturbance is also evident in the acres of scarification. This practice employs the use of mechanical (tractor) grubbing of competitive vegetation.

There was no scarification (brush blading) used to accomplish site preparation during 1998. There has only been 1 scarification project in the last 3 years and this occurred in 1996 on a reversion sale. This represents a significant change in ground disturbing practices moving away from the highly disturbing effects on productivity and habitat that tractor scarification and piling can cause.

**E. Best Management Practices (Clean Water Act (CWA) Compliance)**  
BMP's are project features which are designed to avoid or minimize degradation of water quality, flow regimes and soil productivity. Implementation of BMP's is "management in action" to meet the objectives outlined in the Aquatic Conservation Strategy. Monitoring feedback on BMP performance is integral to adjusting management actions to improve our ability to maintain and restore the ecological health of watersheds. Monitoring of BMP implementation and effectiveness, followed by adjustment of BMP's where appropriate, is necessary for compliance with the CWA (1972, 1977, & 1987).

Over the last 3 years the District has focused attention on BMP review primarily during implementation monitoring. This has involved assessment of beneficial use identification and BMP identification, design and implementation. Monitoring has indicated that the district, while not perfect, has a good record of implementing design features (BMP's) identified in NEPA documents. In most cases these have been designed according to the risks to, and needs of, the beneficial uses. Beneficial use identification is primary to designing appropriate BMP's and identifying potential impacts.

Notable effectiveness monitoring was conducted during 2 phases of inventory following the flood events of February 1996. A report on the 1996 Flood Assessment (in entirety) is available at the district office. A narrative summary and excerpts of results involving BMP assessment and recommendations for BMP adjustment are included in Appendix

8 of this document. This flood offered a unique opportunity to assess the effectiveness of Best Management Practices (BMP's) and ACS restoration when exposed to a catastrophic events.

FY1998 represents the 4th year of BMP effectiveness monitoring on the McCully Mtn. timber sale in the Cascade R.A. This paired watershed study includes monitoring for changes in stream flow, sediment and temperature. Harvest and roading activities concluded and implementation of BMP's occurred in 1997. Data analysis and initial reporting is expected in 1999.

Data from water temperature monitoring on sites throughout the district (as part of 303d monitoring) has demonstrated the effectiveness of riparian reserves in maintaining stream temperature and meeting water quality standards. Water temperature monitoring in streams with large debris jams has confirmed that floodplain development in and around these jams has been effective in reducing water temperature.

## 10. Wildlife and Wildlife Habitat

All of the timber sales in LSRs and AMAs, that are reported later in this report, were designed to enhance late successional forest characteristics for wildlife habitat. Wildlife habitat includes all species from elk to snails, and has benefit for fungus, bryophytes and vascular plants too. Specific S&Gs needed to ensure these projects meet the NFP\RMP objectives are completed as follows:



Green Tree Retention Patch  
BullWrinkle Timber Sale

**A. Green Tree Retention (GTR):** Wildlife biologists usually help mark regeneration harvest units to optimize spacing of retention trees and reserve the most valuable wildlife trees. During FY98, six timber sales were monitored in the matrix and all had adequate numbers of green trees (6-8) retained after harvest. This finding has been consistent in previous years' monitoring.



Tree topped to create snag  
BullWrinkle Timber Sale

**B. Snags and snag recruitment:** Approximately 2 snags\ acre are being left on each regeneration harvest unit. In areas where adequate numbers of snags are not naturally present, additional green trees are being reserved during harvest. They are either allowed to die, or are topped or killed, usually within 3 years after harvest. In FY98, we completed 300 acres of tree top girdling of these reserve trees and identified another 300 acres for future girdling. The green trees that are reserved for snags are above the number reserved for GTRs or future Coarse Woody Debris (CWD). High quality snags are being protected by surrounding them with reserve GTR patches. In young stand small trees are being marked for the development of future snags when they grow to the appropriate size.

**C. Course Woody Debris:** CWD is the hardest wildlife habitat component to meet. When adequate downed material is not available, we either have to leave some of the existing felled trees on the ground or reserve additional standing trees to be felled or blown down by future storms. During monitoring, we have identified several problems with implementing our CWD standards and guidelines. These include disturbance of existing CWD and removal of CWD when amounts were inadequate. Numbers of projects with CWD deficiencies were 4 (FY96), 2 (FY97) and 1 (FY98). This trend is encouraging and likely reflects increased emphasis in CWD protection and retention. Resource Areas have applied mitigation where possible. In one case, where a unit was deficient in CWD as a result of removal by the logger, we bought back some large logs and placed them on the unit. In some older units, harvested prior to the RMP but deficient in CWD, trees on unit boundaries were felled into units and blowdown trees were transported to units deficient in CWD.

**D. Connectivity:** Very little timber sale activity has occurred in connectivity blocks during the period 1995-1998, consisting of one timber sale, mostly thinning, and one right-of-way. There was one 12 acres regeneration harvest, within the Firry Goon thinning T.S., which was monitored during FY97 and found to have maintained the 12-18 green trees as required. Resource areas have been identifying and mapping the 25% retention areas within the connectivity blocks.

**E. Special Habitats:** A variety of pre-project surveys by the biologists, botanists and ecologists find the special habitats within project areas. Of 810 projects of various kinds that have been implemented since 1996, only 40 have had any special habitat in the project area. These consisted of wet meadows, dry meadows, one small cave, bogs, and cliffs. Projects were modified projects to avoid or protect the special habitats as appropriate. Monitoring results indicate this has apparently been successful.

**F. Nest sites, activity centers and rookeries:** Six new nest trees (1 osprey, 5

spotted owl) were discovered in 1998. No new rookeries have been found since 1995. Known nesting trees have been protected. For active nests, particularly for raptors and special status species, seasonal restrictions have been placed on nearby projects. Seventeen spotted owl activity centers (1857 acres of 100+ acre core areas) identified in accordance with the RMP have been protected for many years. No nest boxes or platforms have been installed since implementation of the RMP. Some tree topping has occurred to provide nesting structures for forest raptors.

**G. Elk Habitat:** Elk habitat has been improved by closing some roads in conjunction with watershed restoration. For watershed restoration, 22 miles of road were closed on the district in FY98. We are currently planning for another 25-30 miles to be closed in FY99. While elk are not the primary reason for these road closures, they are primary beneficiaries.

**H. Late Successional Reserve habitat improvement:** During FY98, within LSRs, we have done 296 acres of density management in 50-70 year old stands to create old growth characteristics in these stands. We are planning and designing another 500 acres for FY 99. In FY98, we also did 371 acres of precommercial thinning in very young stands in LSRs to begin to set the stand toward older forest structure.



**11 Fish and Fish Habitat :** A significant amount of fisheries program time was spent on project level NEPA documents, watershed analysis, inventory, monitoring and T&E program requirements. District personnel continued limited spawning and adult rearing surveys in coastal and Willamette Valley streams. In FY 1998, we continued to contract with the Oregon Department of Fish and Wildlife (ODFW) for stream habitat

Log structures improve fish habitat by creating pools and capturing spawning gravels.

Log structures improve fish habitat by creating

inventories, this year under the BLM/ODFW statewide inventory contract. Since 1994, approximately 315 miles of fish habitat has been inventoried utilizing the ODFW inventory methodology. These inventories provide important data on baseline conditions for project development, NEPA analysis, monitoring and ESA consultations. One instream fish habitat project was funded in FY 1998, however the project could not be implemented due to the ESA listing of Lower Columbia River steelhead. This project will be implemented in FY 1999 after the consultation process is completed. Fish passage was improved at several culverts on Nestucca River tributaries as part of improvements to the Nestucca Road. Fisheries personnel have participated in

discussions related to heightening of McGuire Dam and potential mitigations on the Nestucca River. Local cooperative efforts have been focused on watershed analysis and ongoing support and technical assistance to various watershed councils. The district entered into challenge grant agreements with the ODFW, Pacific NW Forest and Range Experiment Station, Mt. Hood National Forest and Portland General Electric for one adult trapping and two smolt trapping operations, part of baseline data collection efforts. We have coordinated with FS, National Marine Fisheries Service, U. S Fish and Wildlife Service and ODFW on numerous occasions.

## **12. Special Status and SEIS Special Attention Species and Habitat**

Surveys for Special Status (SS) and Special Attention (SA) species (See glossary) are being conducted prior to all ground disturbing activities. Roughly 15,800 acres of preproject surveys have been conducted during the three year summary period (1996 - 1998). Species oriented inventories were conducted on approximately 600 acres for five out of 44 SS and 93 SA species known to exist on district managed land.

The Conservation Strategy for *Cimicifuga elata* (Tall bugbane) developed by western Oregon BLM Districts, Forest Service and the Army Corps of Engineers has been implemented since June 1996.

The district has formed and maintained many partnerships with other government agencies, conservation organizations, and academic institutions to learn more about the SS and SA species for which we manage. Partners for population dynamics studies include the US Forest Service and the Berry Botanic Garden for *Erythronium elegans*, *Dodecatheon austrofrigidum*, and *Sidalcea nelsoniana*. Along with other BLM Districts and National Forests in western Oregon and Washington the district has cooperated with Oregon State University to learn about the genetic diversity of *Corydalis aquae-gelidae* and *Cimicifuga elata*. The diversity and growth of epiphytic mats was studied by way of a cost share study with Oregon State University.

Seven SS plant species at twenty one sites are monitored on a one to three year basis to determine population trends and general habitat condition.

The total number of SS and SA plants and fungi known sites to occur on district managed lands at the end of 1998 are presented in the accompanying tables. Each site is a separate record in our database.

### **A. Survey & Manage Species (S&M) and Protection Buffer Species**

The Salem District has implemented the management action / direction associated with Survey & Manage and Protection Buffer species through FY 1998. The adaptive management application of the experience gained in implementing this management action / direction has resulted in the consideration of possible adjustments (See Appendix 26- Modifications being considered for Survey & Manage / Protection Buffer guidelines ). The information in the Annual Program Summary for Survey & Manage and Protection Buffer species is not meant to be comprehensive or exhaustive.

Approved protocols have been developed for lichens, bryophytes, the fungus *Bridgeoporus nobillissimus*, and mollusks (Component 2 species).



Nearly every project which had surveys completed during FY98 had at least one S&M species plant or mollusk found. A cursory check of records showed that from 1 to 4 survey strategy 1 species were found on the surveyed projects. The presence of these species are an additional factor to consider in the project planning. On timber sales, several types of actions were taken to manage these sites, including: alterations of boundaries; locating green-tree retention blocks around the S&M sites; dropping units; and buffering the sites for protection.

"Oregon Megomphix" *Megomphix hemphillia*  
Survey and Manage Component 2

Regional and extensive surveys for strategy 3 and 4 S&M species will be done at the regional level, not the local level. Survey strategy 3 & 4 species, particularly lichen and fungi, were encountered on nearly every project during botanical surveys in FY 98 (from 1-10 species), were appropriately documented, and managed as deemed appropriate. Alterations to projects for strategy 3 & 4 species was much less frequent than for the strategy 1 species.

In addition to the plant and fungi species, the district has 12 Survey and Manage / Protection Buffer animal species that may be present, some of which require surveys.

CANADA LYNX: Although there have been incidental sightings in Oregon within the last 10 years this species is thought to be extirpated from the state. However, surveys and Section 7 consultation are required for ground disturbing activities that may occur on BLM lands above 4500' in elevation. There are a total of 693 acres (BLM) within the district over that elevation - all within the Cascade Area. All 693 acres are within designated LSRs. No projects were planned above that elevation and therefore surveys were not required.

OREGON RED TREE VOLE: In accordance with interim guidance on red tree voles, all of the 5<sup>th</sup> field watersheds within the district were evaluated and met the initial screening criteria indicating there was sufficient habitat. As a result, site specific surveys were not required.

LARCH MOUNTAIN SALAMANDER: This species may occur within the Cascade Resource Area. Interim guidance and the draft protocol indicate that proposed ground disturbing activities in areas with suitable habitat must have surveys. One project, Rusty Saw Timber Sale, is located within the historic range of this species. However, habitat evaluations indicated that the area lacked suitable habitat and therefore

surveys were not required.

**Table 6**

Total Number of Sites by Taxa Group for Special Status Plant Species (9/30/98)					
Taxa Group (#species)	Federal Listed	Federal Candidate	Bureau Sensitive	Assessment Species	Tracking Species
Fungi (10)			3		21
Lichens (6)				2	4
Bryophytes (4)				1	
Vascular Plants (24)	1		34	1	42

**Table 7**

Total Number of Sites by Taxa Group for Special Attention Plant Species (9/30/98)					
Taxa Group	Protection Buffer	Survey & Manage strategy 1	Survey & Manage strategy 2	Survey & Manage strategy 3	Survey & Manage strategy 4
Fungi	48	106	10	303	70
Lichens	0	11	8	13	603
Bryophytes	18	18	0	16	48
Vascular Plants	0	7	7	0	0
Totals	66	142	25	332	721

note: some special attention species are included in more than one status category

**Table 8**

Total Number of Species by Taxa Group for Special Attention Plant Species (9/30/98)					
Taxa Group	Protection Buffer	Survey & Manage strategy 1	Survey & Manage strategy 2	Survey & Manage strategy 3	Survey & Manage strategy 4
Fungi	5	18	0	23	0
Lichens	0	6	0	2	33
Bryophytes	2	2	0	0	1
Vascular Plants	0	2	2	0	0
Totals	7	28	2	25	34

note: Species are tallied in only one category...many have designations in more than one category.

GREAT GREY OWL: This species is primarily found above 3500 feet in elevation, however sightings have occurred within the Willamette Valley portion of the Salem District. We have not had any projects during the last three years that would impact their habitat.

MOLLUSKS: Eight Survey and Manage strategy 1 and 2 mollusk species are potential residents of the district, eight in the Cascades Area, and six each in Mary's Peak and Tillamook Areas. These are the only species for which surveys to protocol were conducted. Of the 10 projects surveyed in FY98, 357 of 1402 plots(25%) had detections of an S&M mollusk. Three of the species, *Cryptomastix devia*, *Deroceras hesperium* and *Pristiloma arcticum crateris* were not detected within the District.

## **B. Threatened \ Endangered Species**

### **1) WILDLIFE**

In FY98, interagency teams continued using the section 7 consultation streamlining process. Level-1 teams, consisting of local employees from BLM, USFS, NMFS and USFWS, regularly met to accomplish consultations as efficiently and speedily as possible. Four wildlife programmatic consultation package were prepared, one each for disturbance and habitat modification, for the Willamette Province and Coast Range Province. This helped avoid numerous redundant consultation efforts for normal, repetitive actions. The Biological Opinions received from USFWS's are then used in project planning for the upcoming years projects.

#### **Bald Eagle**

We have been active in surveying for T\E species. During FY98 we surveyed five known bald eagle nesting sites for annual activity and reproductive success. In coordination with federal and state agencies we completed winter bald eagle counts on five designated routes. The largest known winter roost site on the district, with counts as high as 42 eagles, is along one of these survey routes.

#### **Marbled Murrelet**

We have 29 known occupied sites in LSR and AMA land use allocations of the coast range. Six new sites mapped since the RMP account for an additional 1809 acres of "unmapped LSRs". We are required to conduct two years of surveys for marbled murrelets on all projects that will modify suitable habitat in the coast range. During the period 1995-1998, surveys have been completed, where required for specific projects, in accordance with established protocol. In recent years we have been unable to survey most of the historic known sites to maintain records of occupancy due to lack of funds. Valley of the Giants is the only place that we have uninterrupted records of use.



Northern Spotted Owl

### **Northern Spotted Owl**

In cooperation with PNW, 30 spotted owls sites in the Coast Range that are used in the NFP's demographic study are surveyed annually. First results from this study are expected in 1999. We also survey about 60 sites in the Cascades, with adjacent landowners and state agencies, for use in project planning. (Also see section 10F)

### **2) FISH**

In FY 1998, interagency teams continued using the Section 7 consultation streamlining process. Level 1 teams, consisting of members from BLM, USFS, NMFS and USFWS, regularly met to assure consultation was accomplished efficiently and speedily.

The fisheries consultation workload increased significantly in 1998 with the listing of the Oregon Coast coho salmon Evolutionarily Significant Unit

(ESU), Lower Columbia River steelhead trout ESU and the Columbia River bull trout Distinct Population Segment (DPS). Four additional ESUs were proposed for listing: Upper Willamette River spring chinook, Upper Willamette River winter steelhead, Columbia River chum salmon and Lower Columbia River chinook salmon. These listings and proposed listings affect nearly all lands and actions on the district.

Two programmatic biological assessments (BA) were prepared and are presently undergoing consultation for actions which may affect Oregon Coast coho salmon and Lower Columbia River steelhead trout. These assessments were developed in cooperation with the National Marine Fisheries Service, the Siuslaw, Mt. Hood and Gifford Pinchot National Forests, Eugene District BLM, and the Columbia River Gorge National Scenic Area. These assessments cover numerous "minor" types of projects with fish disturbance and habitat modification issues. BAs for major activities such as timber harvest have also been submitted for consultation. Completion of many consultations have been delayed as a result of legal issues affecting the National Marine Fisheries Service. These delays have affected BLM actions. For example, one instream fisheries project was not implemented in 1998 and a sold timber sale has not been awarded because of the delay.

## **13. Special Areas**

### **A. Areas of Critical Environmental Concern**

Management plans for Areas of Environmental Concern (ACECs) are in various stages of completion and revision. Some are adequate and will remain in effect. Others were revised for RMP consistency. New ones

were also written. Status of plans through FY 98 is shown in the following table.

**Table 9 - STATUS OF ACEC MANAGEMENT PLANS**

Number of ACECs (Table 2-RMP)	Number of ACECs Which had Mgt. plans in 1995	Number of 1995 existing plans which are still valid	Number of 1995 existing plans that have been updated	Number of 1995 existing plans that still need to be revised	New plan completed in 1998 OR Number of ACECs that need new plans
26	17	6	6	5	9

**B. Wild and Scenic Rivers:** The BLM has not conducted any comprehensive in-stream flow studies or analyses for Wild and Scenic Rivers in the district (Sandy, Salmon, Elkhorn and Quartzville). However, the BLM has developed and conducted extensive water quality and flow monitoring programs, fish and aquatic habitat analyses and botanical surveys along some of the designated rivers. Wild and Scenic River plans, specifically the Sandy River, Salmon River and Quartzville Creek were reviewed for compliance with Aquatic Conservation Strategy objectives and were found to be consistent with policy. All plans were found to meet or exceed goals and objectives. Plans are being partially implemented as funding allows.

**C. Wilderness:** BLM continues to manage Table Rock Wilderness Area and there were no major issues or actions in this 6,000 acre wilderness. Some limited trail and trail head signing and maintenance occurred in FY98. RMP recommendations to add 560 additional acres in the Camp Creek and Rooster Rock area, as well as to officially designate 640 acres of Sec. 16 to the wilderness is pending appropriate Wilderness legislation. Renovations and stabilization of the historic Peachuck Lookout, just outside of the Wilderness Area, continued with the installation of new windows, painting and other maintenance. Boundaries were mapped in our computerized GIS database.

#### **14. Cultural Resources**

Relationships with American Indian groups have broadened as a result of the NFP. Several tribes are represented on the Coast Range Provincial Advisory Committee, where they participate with other interests to provide advice on activities within the province. Tribal notification has been made for FY 95-98 projects as appropriate.

The district continued to actively promote appreciation of cultural resources through public education and interpretive programs. School teachers were trained in use of the "Exploring Oregon's Past" teachers activity guide at three in-service workshops. The guide was revised and updated, and several hundred distributed.

Intensive cultural resource inventories continued in FY98, covering 1908 acres. That brings the cumulative total if inventory between FY95-98 to 9449 acres.



## **15 Visual Resources**

VRM guidelines continued to be implemented as part of all reviewed projects and actions. The Mt. Hood Corridor exchange with Longview Fiber added nearly 3,000 acres to VRM I category, protecting the viewshed from Highway 26 near Mt. Hood.

## **16. Rural Interface Areas**

During the period 1995-1998, 62 projects were completed within rural interface areas. During implementation monitoring of some of these units, questions addressing rural interface issues were addressed (i.e. hazards, dust abatement, design features and fuel hazards). Results show that rural interface issues have been adequately addressed during project planning and no significant conflicts occurred.

## **17. Socioeconomic Conditions**

### **A. Employment / trends**

The Salem District encompasses 12 counties in Oregon, this is by far the most of any BLM District in Oregon. The economy and employment statistics are dominated by the Portland metropolitan area. That area is defined and Clackamas, Multnomah, Washington, and Yamhill Counties. During the 1984-88 baseline period, these counties represented 50.4% of total wage and salary employment in the entire State of Oregon. By 1997, the percentage had increased to 60.2%. Statewide employment increased by 42.7% between the baseline period and 1997. In the district, the Portland metropolitan counties experienced a 70.5% increase in employment. Counties along the I-5 corridor, Benton, Linn, and the Salem metropolitan area (Polk and Marion counties) were able to keep pace with statewide employment growth. Tillamook county was the only other county in the district to keep pace with statewide employment growth. Total wage and salary employment in the remaining counties grew at the following rates: Clatsop, 26.1%; Columbia, 18.3%; and Lincoln, 36.5%.

The lumber and wood products sector has shown relative strength within the district since the baseline period. The sector has been bolstered by pulp and paper employment and construction of manufactured homes, particularly in counties along the I-5 corridor. The Portland and Salem metropolitan areas were the only counties to show net increases in lumber and wood products employment since the baseline period. These increases were 4160 jobs in Portland (35.7%), and 560 jobs in Salem (16.3%). There was no net change in Lumber and Wood Products between 1997 and the baseline period in Tillamook County. However, current employment is now less than half of that in previous decades (1970 and 1980) because of a major drop in the early 1980's that was prior to the selected baseline period. In the remaining counties losses in the Lumber and Wood Products sector have been as follows: Clatsop, 4.7%; Columbia, 13.8%; Linn, 10.7%; Lincoln, 41.4%; and Benton 23.1%. Statewide, a 20% loss was seen in the Lumber and Wood Products sector. The decline in statewide Lumber and Wood Products employment is less than would be anticipated given the 50% decline in timber harvest. Factors such as decreased exports, and increases in manufactured home building have had an offsetting effect.

As in the national and statewide economies, the counties in the Salem District showed

strength in the trade and services sectors. These sectors are expected to continue as growth sectors. Along the I-5 corridor, non-lumber and wood products manufacturing also showed strong growth. High tech manufacturing has gotten the most publicity, but a diversity of types and sizes of manufacturing have located in the area since the baseline period. See Appendices 17 through 25 for detailed information on employment by industry for counties and metropolitan areas in the Salem District.

The district provides employment opportunities to local companies and individuals as it implements the components of the Northwest Forest Plan. Timber sales, silvicultural treatments such as pruning, thinning and planting trees, the collection of ferns, mushrooms and firewood, and the recreational use of public lands provide work opportunities.

Salem BLM, in coordination with other federal, state and local governments, participates in the Northwest Forest Plan's Jobs in the Woods(JIW) / Watershed Restoration program. The program provides on-the-job training opportunities for workers displaced from forestry related work. The workers are hired to work on crews restoring fish and forest habitat. In addition to hiring crews, part of the money is used to hire local area contractors to do restoration work. More specific JIW information is discussed in section 17C below.

The Oregon and California (O&C) Grant Lands Act of 1937 provides that revenues from the O&C lands be distributed back to the 18 O&C counties. Historically, O&C receipts from the harvest of timber in western Oregon have been and remain a significant source of revenue to both the U.S. Treasury and the O&C Counties. However, due to resource conflicts, harvest levels have dropped significantly from historical levels, significantly impacting some local economies. The traditional O&C Act payment formulas were modified in the Omnibus Budget Reconciliation Act of 1993. The Act provides the western Oregon counties a "special payment amount" based on an annually decreasing percentage of a five year average (1986-1990), replacing the old O&C payment. Counties will receive the Special Payment Amount from 1994 to 1998. From 1999 through 2003, payments to counties will be the greater of either the special payment amount identified, or fifty percent of total receipts, whichever is greater. Actual payments made for the past three years are shown in Table 10.

## **B. Receipts & Distributions**

Table 10 reports various receipts and distributions and a variety of budget items, all which relate to local employment, as well as various payments to counties. As federal funding for activities and contracts decreases, there is some effect on the local economy, primarily on forest related contractors and businesses.

## **C. Jobs-in-the-woods Program**

The Jobs-in-the-wood (JIW) program completed numerous types of ecosystem improvement projects:

- 1) Road Erosion and Sediment Stabilization projects include such work as closing/blocking roads, installing gates, replacing culverts, improving road ditches.(15 projects in FY98)**

- 2) Riparian Silviculture projects include such work as timber stand density (thinning young stands), converting stands to mixed conifer, creating down woody debris.(2 projects in FY98)
- 3) Stream Channel Restoration projects include such work as installation of fish passage culverts and in-stream structures, repair of log and boulder structures and pools, habitat inventories.(1 project in FY98)
- 4) Upland silviculture projects include such work as upland stand density management, habitat diversification, down and woody debris creation, and site prep.(7 projects in FY98)
- 5) Inventory/Data Collection projects include such work as collection of biological and physical data in streams, riparian areas and upland sites, stand exams, habitat inventories. (9 projects in FY98)
- 6) Recreation Facilities Development projects include such work as improvement of campgrounds and trails, signing, outdoor education sites.(2 projects in FY98)

The 36 projects actually completed in FY98 were located across 11 counties within 4 congressional districts and accounted for \$1,082,000 of the FY97 / 98 project dollars.

#### **D. Environmental Justice**

Executive Order 12898 issued February 11, 1994, states: Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations directs all federal agencies to “. . . make achieving environmental justice part of its mission by identifying and addressing . . .disproportionately high and adverse human health or environmental effects of it’s programs, policies and activities.”

New projects with possible effects on minority populations and/or low-income populations will incorporate an analysis of Environmental Justice impacts to ensure any disproportionately high and adverse human health or environmental effects are identified, and reduced to acceptable levels if possible.

Copies of the Executive Order, the accompanying Memorandum for the Heads of All Departments and Agencies, and Councils on Environmental Quality Guidance on Environmental Justice issued February 1998 can be requested from our District office.

**Table 10 - Salem RMP, Summary of Socio-Economic Activities and Allocations**

Program Element	Fiscal Year 1996	Fiscal Year 1997	Fiscal Year 1998
District budget	\$14,577,000	\$16,064,000	\$14,325,000
Special Appropriations for Flood 96 damage repair	\$25,000,000	\$16,708,000	\$7,570,000
Timber sale collections, O&C lands	\$13,105,357	\$12,007,626	\$11,240,047
Timber sale collections, P.D. lands	\$15,063	\$24,506	\$557,374
Payments to Counties(O&C)	Benton \$2,052,401 Clackamas \$4,053,675 Columbia \$1,504,607 Lincoln \$262,941 Linn \$1,928,234 Marion \$1,066,372 Multnomah \$796,127 Polk \$1,577,646 Tillamook \$409,019 Washington \$460,147 Yamhill \$525,882  Total Salem \$14,637,051	Benton \$1,974,462 Clackamas \$3,899,738 Columbia \$1,447,470 Lincoln \$252,956 Linn \$1,855,010 Marion \$1,025,877 Multnomah \$765,895 Polk \$1,517,736 Tillamook \$393,487 Washington \$442,673 Yamhill \$505,912  Total Salem \$14,081,216	Benton \$1,896,522 Clackamas \$3,745,801 Columbia \$1,390,333 Lincoln \$242,971 Linn \$1,781,786 Marion \$985,382 Multnomah \$735,662 Polk \$1,457,825 Tillamook \$377,955 Washington \$425,199 Yamhill \$485,942  Total Salem \$13,525,378
Payments to Counties (PILT)	Benton \$12,679 Clackamas \$67,211 Columbia \$13,587 Lincoln \$20,851 Linn \$69,754 Marion \$26,576 Multnomah \$9,235 Polk \$50,579 Tillamook \$17,894 Washington \$18,469 Yamhill \$9,501  Total Salem \$316,336	Benton \$2,002 Clackamas \$50,041 Columbia \$0 Lincoln \$17,609 Linn \$45,997 Marion \$19,730 Multnomah \$7,255 Polk \$42 Tillamook \$8,925 Washington \$1,619 Yamhill \$2,476  Total Salem \$155,696	Benton \$5,212 Clackamas \$123,272 Columbia \$0 Lincoln \$40,490 Linn \$105,259 Marion \$45,226 Multnomah \$17,140 Polk \$351 Tillamook \$22,368 Washington \$1,569 Yamhill \$5,674  Total Salem \$366,561
Value of forest development contracts	\$813,000	\$915,056	\$85,129
Value of timber sales, oral auctions (_#) and negotiated (_#)	<u>Oral Auctions</u> \$12,942,815 (20 auctions) <u>Negotiated</u> \$14,009 (15 negotiated)	<u>Oral Auctions</u> \$13,479,710 (12 auctions) <u>Negotiated</u> \$64,370 (6 negotiated)	<u>Oral Auctions</u> \$9,493,435 (7 auctions) <u>Negotiated</u> \$98,846 (9 negotiated)

See appendices for acronym explanations

**Table 10 - Salem RMP, Summary of Socio-Economic Activities and Allocations**

**Continued**

<b>Program Element</b>	<b>Fiscal Year 1996</b>	<b>Fiscal Year 1997</b>	<b>Fiscal Year 1998</b>
Jobs-in-the -Woods funds in contracts	\$1,259,979	\$1,944,355	\$868,513
Timber Sale Pipeline Restoration Funds	NONE	NONE	\$1,246,173
Recreation Fee Demonstration Project receipts		\$24,988	\$262,369
Value of land sales	\$104,889	\$1,821	\$50,500

See appendices for acronym explanations

**18. Recreation & Off-Highway Vehicle Management**

**A. Developed Recreation Areas:** Numerous efforts have or continue to be implemented to develop or enhance recreation and wildlife viewing amenities, facilities, or areas. Completion of the nationally recognized Cascade Streamwatch project highlighted the FY 98 year. Extensive interpretive and trail facilities were constructed



including outdoor education shelters, underwater stream viewing building and a wetlands boardwalk trail. These accessible trails and facilities, located at Wildwood Recreation Site offers barrier-free boardwalk access for educational groups and the general public to view and learn about wildlife, salmon, wetlands and watersheds.

Floating the Sandy River

Other recreation improvements, many funded by Recreation Pipeline funds, were completed in FY98.

Recreation backlog maintenance upgrades and repairs were completed to improve water and sewer systems, repair buildings and facilities and enhance access for persons with disabilities. New bridges were installed at the Alsea Falls Campground and the Valley of the Giants Outstanding Natural Area. Numerous repair and improvements completed at existing recreation sites and dispersed use areas along the Molalla River, Quartzville Creek, Little North Santiam Recreation sites, Wildwood Recreation Site, Fishermen’s Bend Recreation Site, Nestucca River campgrounds, and many other sites will protect resources and support economic development activities (tourism) in nearby local communities (Mill City, Mehema, Molalla, Lebanon, Sweet Home and others). BLM works cooperatively with the Linn County, Marion County and Clackamas County tourism coalitions in the development of recreation related facilities and information.

**B. Proposed Recreation Sites and Trails:** The Molalla Rifle Club, a new five acre target shooting range, will be developed and operated under a lease agreement. State of the art environmental and safety protection are incorporated into design requirements. No other new recreation sites or trails were developed during FY98. Several new trail improvements and new campsites are planned for FY99 and FY00 in

the Molalla River/Table Rock SRMA pending environmental assessment work and funding.

**C. Special and Extensive Recreation Management Areas(SRMAs and ERMA):**

Management, improvement, monitoring and visitor services of SRMAs continue to be implemented throughout the district. Particular efforts have been focused on the Molalla River/Table Rock , Sandy River, Mt. Hood Corridor, Quartzville and Nestucca SRMAs. A summary of guidance for management of recreation and other natural resources on Marys Peak was completed in cooperation with the Siuslaw National Forest and the City of Corvallis. Resource protection and restoration, signing and law enforcement highlight activities in the ERMAs within the district.

**D. Back Country ByWays:** During FY98, new signs and facilities were installed along the Quartzville Back Country ByWay. In addition, paving and other road improvements were completed on the South Fork Alsea and Nestucca Back country ByWays.

**E. Off-highway vehicle areas:** The district RMP/ROD did not map areas designated for off-highway vehicle (OHV) use, but indicated that the areas would be mapped at a later time. Areas were mapped for the Tillamook Resource Area in FY96 and reported in the 1996 APS. No other areas have been mapped to date. No new facilities or regulations were implemented in FY98. New use guidelines and OHV policy for the Cascades Resource Area will be developed and implemented in FY99. Additional OHV trail developments and improvements in the Bald Mountain OHV area were approved by the Tillamook Resource Area in FY98.

**19. Forest Management**

**A. Timber Harvest Activities**

During the first few years of RMP implementation, the timber harvest program reflects a mix of the “**Old**” and “**New**”. Old sales were sold under the previous land use plan but just recently harvested. New sales were designed and sold under the standards and guidelines of the RMP. Four of the “old” sales were released in accordance with Sec.2001(k)(1) of the 1995 Rescissions Act (PL 104-19).



Cutting Second Growth Timber

In the RMP, an allowable sale quantity (ASQ) of 34.8 million board feet (5.7 million

cubic feet) was declared. As stated in the RMP:

*"The allowable sale quantity for the resource management plan is an estimate of annual average timber sale volume likely to be achieved from lands allocated to planned, sustainable harvest. This estimate, however, is surrounded by uncertainties. The actual timber sale levels may differ, as timber sale levels will be an effect of overall forest management rather than a target that drives that management. Harvest of this approximate volume of timber is considered sustainable over the long term. This is based on assumptions that the available land base remains fixed, and that funding is sufficient to make planned investments in timely reforestation, plantation maintenance, thinning, genetic selection, forest fertilization, timber sale planning, related forest resource protection, and monitoring.*

*The allowable sale quantity represents neither a minimum level that must be met nor a maximum level that cannot be exceeded. It is an approximation because of the difficulty associated with predicting actual timber sale levels over the next decade, given the complex nature of many of the management actions/direction. It represents BLM's best assessment of the average amount of timber likely to be awarded annually in the planning area over the life of the plan, following a start-up period. The actual sustainable timber sale level attributable to the land use allocations and management direction of the resource management plan may deviate by as much as 20 percent from the identified allowable sale quantity. "*

During the third year evaluation, we will likely evaluate the assumptions used in determining the ASQ, which involves several of the items listed above. We may consider noted differences in volume per acre being realized during harvest, differences in acreage available for harvest, and differences in age classes being harvested compared to estimates and numerous other factors. For that reason, we are generally tracking some of these factors. They are displayed in appendices which report timber harvest, thinning, and silviculture activities during FY 95-98, as well as a glossary.

It was recognized that implementation of the full ASQ would be gradual. As expected, the target volumes during the startup period were below the ASQ of 34.8 MMBF to account for expected difficulties getting sales prepared under the revised NFP standards. This is reflected in Appendix 1. By 1998 the district had ramped the sale volumes up to the ASQ, with some extra to make up for previous years shortages. The accompanying line graph reflects this activity.

One public concern has been the perception that we are harvesting all of our old growth timber. To assess that perception, we have included appendix 2 to show the acres cut by age class where harvesting has been done. In the Salem District, nearly all regeneration harvest (94%) has been completed in stands less than 130 years old and thinning is primarily in stands 50-60 years old. In reality, we are harvesting our oldest available stands at a much slower rate than younger stands.

## **B. Silviculture Activities**

Silvicultural activities are primarily focused on units which have been harvested in the past 10-20 years. There is some increase in silvicultural activity in projects designed to improve riparian habitat, mainly by establishing a conifer component. Activities during FY98 are shown in Appendix 7. This information will be tracked and used in evaluation of computer modeling projections. The actual amounts shown represent 100%

accomplishment of needed treatments during FY98.

**20. Special Forest Products (SFP)**

The district follows the standards and guidelines set forth in the Oregon/Washington Special Forest Products Procedure Handbook. Each resource area established specific guidelines for the management of individual special forest products within their area using an interdisciplinary approach. These guidelines can be found in each resource area’s NEPA document for SFP. Appendix 9 reflects the SFP sales for FY 1996 -1998 on the district. It provides an opportunity to observe fluctuations from year to year, and to identify which products were of most interest during the reporting year. There are no estimates or projections for Special Forest Products that need to be compared to the sold quantities shown.

**Table 11 - Recent management actions to control noxious weeds**

Treatment	Species	FY96 Acres	FY97 Acres	FY98 Acres
Manual	Scotch Broom	5	80	80
	Meadow knapweed	2	2	2
	Spotted knapweed	2	2	2
	Diffuse knapweed	0	0	1
	Gorse	10	0	0
Biological	Scotch broom	100s	100s	100s
	Canada thistle	500	500	500
	St.John’s wort	200	200	200
	Bull thistle	250	250	250
	Tansy ragwort	1000s	1000s	1000s

## **21. Noxious Weeds**

The objectives of the district noxious weed program are to contain and/or reduce noxious weed infestations on BLM-administered lands using an integrated pest management approach and to avoid introducing or spreading noxious weed infestations in any areas. The district continues to survey BLM land for noxious weed infestations through systematic surveys and during project planning (See Table 11). Infestations are reported to the Oregon Department of Agriculture, and the district cooperates with the department to control infestations. Integrated pest management includes chemical, mechanical, manual and biological methods which are used in accordance with BLM's 1985 Northwest Area Noxious Weed Control Program Environmental Impact Statement, and 1987 Supplement, and respective Records of Decision.

Noxious weed risk assessments have been integrated into all project clearance surveys, which have averaged 5500 acres over the last four years. The majority of new noxious weed sites have been found through systematic roadside inventories. Sites that have been identified through project planning and inventories have been managed in accordance with the Resource Management Plan.



## **22. Wild Fire and Fuels Management**

FY 98 turned out to be a very mild year for wild fires. The district had 12 fires, all of which were human caused. Total acres burned were 6.4. Fire prevention, detection, and suppression continues to be handled through the Western Oregon Protection Contract with the State of Oregon Department of Forestry.

There were no escaped fires during the FY which would have required a Wildfire Situation Analysis (WFSA).

The district completed all aspects of Phase 1 and 2 fire planning. A new Fire Management Plan was completed and signed by the State Director. This

plan is expected to be implemented during FY 2000.

21 prescribed burns for a total of 330 acres were accomplished during the FY. All areas were successfully treated within the parameters set forth in the approved burn plans. Several of our prescribed fire managers also assisted other agencies in accomplishing their prescribed fire objectives.

## **23. Access & Rights-of-Way**

Access, whether acquired by the BLM to cross non-BLM lands or by private landowners to cross BLM lands, is accomplished by several methods. BLM and numerous private industrial landowners have reciprocal right-of-way agreements, which have existed for many years. These agreements facilitate access through the complex checkerboard

ownership pattern of Salem BLM lands. Other individual rights-of-way are occasionally issued by the BLM for such things as driveways, power lines, and communication sites. Easements are also commonly used to attain BLM access over private property.

During FY98, ten reciprocal right-of-way agreements were updated. That brings the total updates since implementation of the RMP (1995-1998) to thirty. In addition, during FY98, two individual rights-of-way were issued, for a total of nineteen since 1995. BLM-administered lands will continue to be available for rights-of-way when consistent with land use planning, local comprehensive plans and Oregon State laws.

There were no new easements issued in FY98, but eleven have been issued since 1995. These included road easements, trail easements and access to communication sites. Easements for recreation, administrative and timber harvest purposes will continue to be acquired where and when needed to support those programs.

#### **24. Roads**

The Western Oregon Transportation Management Plan (TMP) was developed in 1996 to provide general guidance and direction to District specific Transportation Management Objects (TMO's), including establishing seasonal/weather restrictions on roads in Riparian reserves with the greatest potential to cause sedimentation. In 1998, the district started a process of completing a "interim" TMO which categorizes roads into maintenance levels, season of use and purpose. This has been completed through the manual mapping. We are now in the process of developing appropriate provisions identified in the RMP to meet ACS objectives.

#### **25. Energy and Minerals**

There have been no mineral actions on the district since implementation of the RMP.

#### **26 Land Tenure Adjustments**

##### **A. Land Exchanges & Land Sales and Leases**

The district completed two land exchanges in FY98. The Wildwood Exchange brought about 89 acres of additional recreational opportunities to the Wildwood Recreation Site. The Mt. Hood Corridor Exchange, completed in accordance with Title IV of the Omnibus Consolidated Appropriations Act for FY 1997, added about 3500 acres to BLM ownership in the Mt. Hood viewshed. Considering BLM lands conveyed during these two exchanges, the net acreage increase to BLM was about 2,087 acres. During the period 1995 - 1998, a total of 4524 acres have been acquired by the BLM in 7 land exchanges, while conveying about 2240 acres to other parties.

Four small parcel land sales, for a total of 9.49 acres, were completed during FY98. During the period 1995-1998, a total of fourteen sales were completed for a total of 15 acres. These lands were mostly isolated parcels of BLM-administered land targeted for disposal under the RMP.

One lease, authorized under the Federal Land Policy Management Act (FLPMA), was issued during FY98. No new R&PP leases were issued in FY98, but three have been

issued since 1995.

Future sales, exchanges and purchases will be affected by the H.R. 4326, the "Oregon Public Lands Transfer and Protection Act of 1998. Among the requirements affecting the district are a policy of No-Net-Loss of O&C Land, CBWR Land, or Public Domain Land in carrying out sales, purchases, and exchanges in the geographic area which includes the Salem District.

## **B. Withdrawals**

No withdrawals have been initiated since implementation of the RMP.

## **27. Hazardous Materials**

Since 1995, BLM has identified 16 abandoned waste sites on agency administered lands. Thirteen of the 16 were determined to be hazardous and cleaned up. Abandoned hazardous wastes removed from federal lands included; drug lab waste, abandoned barrels of acids and heavy metals, dynamite, oil based paints, and used paint thinners and solvents.

All existing underground fuel storage tanks at the district and field offices have been removed and, where needed, replaced with approved above ground storage tanks. Official "no further action" letters were requested from the Oregon Department of Environmental Quality (ODEQ) for the removed tanks, and the request is currently under review. Diesel and used oil leaks from 2 underground storage tanks located at the BLM Willamina Road Maintenance Shop have been studied and a final report submitted to ODEQ for approval.

The district participated in a voluntary assessment known as a *Compliance Assessment - Safety, Health, and the Environment (CASHE)* in March of 1997. The CASHE assessment process was developed to assist BLM managers identify environmental compliance issues that may exist at their facilities, and determine how to correct them. We had 127 findings which needed correction as a result of the assessment. At the end of Fiscal Year (FY) 1998, only 4 findings remain unresolved, and all the remaining findings are progressing toward resolution.

## **28. Coordination and Consultation**

**A. Federal Agencies** - During the period 1995-1998, significant increases in cooperation and coordination between federal agencies has been accomplished. Province Advisory Councils, organized in accordance with the Northwest Forest Plan include the following federal agencies: Bureau of Land Management, Forest Service, Bureau of Indian Affairs, US Fish & Wildlife Service, Environmental Protection Agency, National Marine Fishery Service and Natural Resource Conservation Service. In addition, personnel from several of these agencies have been involved in project level planning, conflict resolution, T&E Section 7 Consultation, and implementation monitoring.

**B. State of Oregon** - The district has continued its long term working relationships with Oregon Department of Forestry, Oregon Department of Fish & Wildlife, and Oregon Department Environmental Quality. These relationships cover a diverse

assortment of activities from timber sale planning to fish habitat inventory, from water quality monitoring to hazardous material cleanup and air quality maintenance to wildfire suppression.

**C. Counties** - The district has BLM land in 13 separate counties. While involvement levels vary between counties based on amount of BLM lands, there is frequent mail and telephone contact with various county commissioners and other staff. These involve BLM proposed projects, county projects which may affect BLM lands, water quality and other issues. County commissioners receive copies of all major publications, project updates and project proposals.

**D. Cities** - The district has had increasing involvement with various city governments, most related to timber harvest and road building as they relate to water quality of the city drinking water.

**E. Tribes** - Coordination with American Indian groups has broadened as a result of the NFP. Several tribes are represented on the Coast Range Province Advisory Committee, where they participate with other interests in providing advice on activities within the province. Tribal notification has been made for FY 95-98 projects as appropriate.

**F. Watershed Councils** - The district is significantly involved in participation and support of local Watershed Councils (WC). This provides excellent communication between the BLM and all of the interested shareholders who are interested in their local watersheds and the activities therein. Table 12 shows current status of Salem BLM involvement in local Watershed Councils.

**G. Third Year Evaluation** - A third year evaluation of the district Resource Management Plan will begin in February 1999. Its purpose is to determine whether there is significant cause for an amendment or revision to the plan. This is done by evaluating cumulative monitoring results and accomplishments, determining if the plan's goals and objectives are being met, determining whether goals and objectives were realistic and achievable in the first place and whether changed circumstances or new information have altered activities or expected impacts. The allowable sale quantity will be reevaluated during the third year evaluation. Public outreach was accomplished in Spring 1998, asking for input on any of the above items. Salem received 16 responses from the public, and the concerns raised in those responses will be included in the third year evaluation. Results of the third year evaluation will be available for public comment in mid 1999.

**H. NEPA Documents** - A log book of all NEPA documents prepared in the Salem District is maintained at our public service desk. In addition, the quarterly project update publishes the availability of specific environmental documents and their stage of preparation. This is a vital part of our scoping and public comment policy for all projects. Individual project NEPA documents are also advertized in local newspapers when public review periods are opened. Increasingly, NEPA information is being put

on the district WEB site.

**Table 12 - Salem District Involvement with Local Watershed Councils**

Watershed Council	Resource Area	Status of Involvement 1998
North Santiam	Cascades	Attend monthly meetings.
Clackamas River Basin	Cascades	Attend some meetings.
Lower Columbia River WS Council	Cascades	Not involved at this time
Lower Nehalem WS Council	Tillamook	Not actively involved at this time. Occasional meetings with members.
Marys River WS Council	Marys Peak	Attend monthly council meetings. Member of the council.
Mid-Coast WS Council	Marys Peak	Attend council meetings and technical committee meetings. BLM Not a member of the council. Helped fund a watershed analysis for Rock Creek subwatershed.
Nestucca/Neskowin WS Council	Tillamook	Attend monthly council meetings and technical committee meetings. BLM not a member of the Board. W.C. reviews BLM projects. Participates in water quality monitoring partnership.
Rickreall WS Council	Marys Peak	Attend monthly council meetings. Member of the council.
S.Santiam WS Council	Cascades	Attend most monthly council meetings. Member of the council. Participates in water quality monitoring partnership.
Sandy Basin WS Council	Cascades	Attend some monthly council meetings. Member of the council.
Tualatin WS Council	Tillamook	Attend monthly council meetings and technical committee meetings. Not a member of the council. Working on joint Watershed Analysis/Assessment.
Upper Nehalem WS Council	Tillamook	Attend some meetings and provide technical support. Working on joint project planning.
Yamhill Basin Council	Tillamook & Marys Peak	Attend meetings. W.C. participates in BLM Adaptive Management Area (AMA) planning. W.C. reviews BLM projects. BLM member of council. Participates in water quality monitoring partnership.
Scappoose Bay WS Council	Tillamook	Attend meetings. W.C. involved in BLM project review. Working on joint restoration projects.
Tillamook Bay WS Council	Tillamook	Member of Board. Attending startup organizational meetings.
Pudding River Watershed Council	Cascades	Attend monthly meetings. Technical advisory role only.
Alsea WS Council	Marys Peak	Attended startup meetings - not actively involved at this time.

## **I. Internet**

The district has established an internet web site (<http://www.or.blm.gov/salem>) on which numerous documents are made available to the public. Planning and environmental documents, recreation information, maps, directories and numerous other informative items maintain communication between the district and interested publics.

## **29. Research and Education**

**A. Research:** The Salem District, with other westside districts, supports research at numerous levels. Local members function on Research committees and assist in the determination of research priorities for cooperating research agencies. BLM has had long term relationships with Oregon State University (OSU) researchers, with programs such as the Coastal Oregon Productivity Enhancement (COPE) program spanning numerous years. While the COPE program is now over, it has been replaced with the Cooperative Forest Ecosystem Research program. Government Researchers from USGS work with OSU researchers on projects directly related to current Northwest Forest Plan and Fisheries issues. BLM also works with the FS Pacific Northwest Forest and Range Experimentation Station (PNW) researchers on effectiveness monitoring projects and adaptive management area research proposals. BLM also provides many sites where research can be conducted by the cooperators.

**B. Education Opportunities:** Several key outdoor education programs continued to be implemented during 1998. Programs are operated cooperatively with non-profit educational organizations, schools, colleges and other organized groups. One of the most successful cooperative partnerships is the science-based and award-winning Cascade Streamwatch science-based education program operated at the Wildwood Recreation Site along the Salmon Wild and Scenic River. Over 8,000 students have participated in the program operated in coordination with BLM's partners WolfTree, Inc and US Forest Service since 1994. Other partners utilize the BLM's Larch Mountain Environmental Education Site, Sandy River ACEC, Wellhead Springs ACEC and numerous other locations. Programs include college research (OSU, UO, and Reed College), school environmental education field activities and site monitoring programs. Several special events for the general public are conducted in cooperation with several partners. These include the Salmon Festival (Sandy River) and the Song Bird Festival (Salmon River). Over 15,000 participants normally attend these events. Outdoor education programs were presented in classrooms, outdoor school events and other school based activities, to over 3800 students ranging from first grade through college level.

## **30 Information Resource Management**

The ability to accomplish very complex management of diverse resources requires the ability to access large amounts of data and to apply complicated processing to that data. The goal of the district is to provide it's professionals access to that data and the tools needed to process it.

The BLM, in Western Oregon, made a substantial investment in building a Geographic

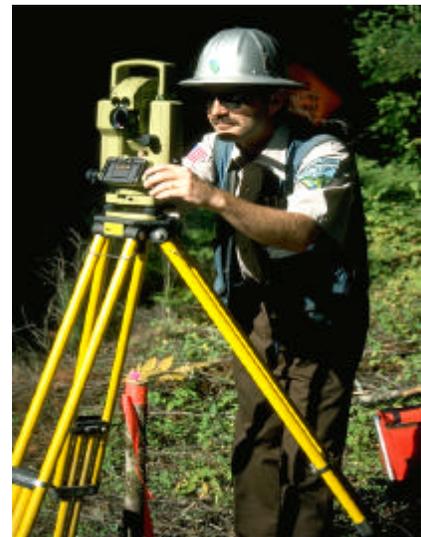
Information System (GIS) as it developed the Resource Management Plans (RMPs). This information system has allowed the BLM to organize, and standardize basic resource data across the Western Oregon Districts. The GIS has now become a day to day tool in resource management that allows us to display and analyze complex resource issues in a fast and efficient manner. In support of the third year evaluation, our GIS efforts have been focused on data and analysis to compare the RMP assumptions with the initial years of plan implementation. BLM is now actively updating, and enhancing our resource data as conditions change and further field information is gathered. The GIS plays a fundamental role in ecosystem management which allows us to track constantly changing conditions, analyze complex resource relationships, and take an organized approach for managing resource data.

The district has continued to gather data needed to perform required analyses. It has continued to maintain current data in existing databases while also seeking to gather new data. The biggest workload in new data collection has been the densification of our Hydro GIS theme. The district has also developed new data themes within GIS, such as fifth field watershed boundaries, as well as developed stand alone databases for such things as monitoring results.

The district has also made substantial investments in it's infrastructure to support the processing of the above data. The District ordered a new server to replace the one containing GIS databases to address increasing database needs. It made substantial investments in the desktop environment to bring much of it's equipment into Y2K compliance. It has also upgraded major portions of it's cabling and networking equipment. These upgrades allow high speed movement of the massive GIS databases between servers and the machines processing the data. The upgrades also increase the reliability of the system. The increases in performance, capability, and reliability of our information systems are crucial as District employees engage in the ever increasing complex analyses required of them.

### **31. Cadastral Survey**

Cadastral Survey is an essential function in accomplishment of resource management plan objectives. Between October 1995 and September 1998, cadastral survey crews completed 39 projects with a total of 162 miles of resurvey (FY96 - 50 miles, FY97 - 47 miles, FY98 - 65 miles). During these resurveys, 203 monuments were established and a total of 129 miles of federal boundaries were marked. These surveys established property lines to facilitate preparation of timber sales and land disposal / exchanges. Many surveys were done on a share-cost with adjacent landowners such as timber companies, with contributions back to the government during this period of \$230,655.



In addition to normal survey work, technical expertise in Geographic Positioning Systems (GPS) technology was provided for botany and

biology mapping, recreation hiking trail mapping, and Geographic Information System (GIS) Land Line Inventory applications.

The cadastral survey crews also completed 75 site survey for Flood 1996 damage sites, Jobs in the Woods projects, district office fencing and building sites, and Fishermans Bend and Wildwood Recreation site projects.

Other accomplishments included resolving Water Rights issues and answering 300 inquiries of surveying information for private land surveyors and local landowners.

### **32. Law Enforcement**

The district's law enforcement program has evolved dramatically since the implementation of the RMP. This federal law enforcement program addresses the public safety and resource protection issues which accompany the districts land management responsibilities under the RMP. Primary to the program are the federal law enforcement rangers assigned to the district. The district also has contracts with several county sheriff's departments for extra enforcement efforts in special poroblem areas

The law enforcement program staffing has increased from 1 federal law enforcement ranger in 1995 to a staff of 3 rangers in 1998. These rangers respond to a variety of incidents, including theft of special forest products, habitat and resource damage, trash dumping, controlled substance crimes, destruction of federal facilities, and disorderly conduct. During 1998, over 144 incidents of these types were reported on public lands within the district.

## **RESOURCE MANAGEMENT PLAN MAINTENANCE - 1998**

The Salem District Resource Management Plan and Record of Decision (ROD/RMP) was approved in May 1995. Since then, the district has been implementing the plan across the entire spectrum of resources and land use allocations. As the plan is implemented, it has become necessary to make minor changes, refinements, or clarifications of the plan. These actions are called "plan maintenance". They do not result in expansion of the scope of resource uses or restrictions or changes in the terms, conditions, and decisions of the approved ROD/RMP. Plan maintenance does not require environmental analysis, formal public involvement or interagency coordination. Certain Plan Maintenance was published in the FY96 and FY97 Annual Program Summaries. The following FY98 minor changes, refinements and clarifications have been implemented as part of plan maintenance for the Salem District RMP.

### **Clarification from OSO/REO**

#### **Guidance on Implementation of the 15 percent retention Standard & Guideline**

Joint BLM / FS final guidance, which incorporated the federal executives' agreement, was issued on September 14, 1998, as BLM - Instruction Memorandum No. OR-98-100. It emphasizes terminology and intent related to the S&G, provides methods for completing the assessment for each fifth field watershed, dictates certain minimum documentation requirements and establishes effective dates for implementation. This Instruction Memorandum is adopted in its entirety as RMP clarification.

#### **Interim Guidance and Survey Protocols for Survey & Manage Species**

Final protocols were issued during FY98 for Component 2 lichens, the fungus *Bridgeoporus nobilissimus*, terrestrial mollusks, aquatic mollusks. These protocols are adopted in their entirety as RMP clarification. Draft protocols on numerous S&M species, and interim guidance (IM OR-97-009 dated 4 Nov. 1996) on red tree voles are being applied pending receipt of final protocols.

### **Clarification developed within Salem District**

#### **Monitoring**

A district monitoring plan has been developed over the past several years. It consists of revision and reorganization of the questions in Appendix J for clarity, as well as development of a process for accomplishing the implementation monitoring in an efficient and credible manner. The revisions to the questions are not substantially changed from Appendix J. The process defines the technical aspects of the monitoring program. Both the revised questions and the process can be reviewed in the district office.

RMP Pg 7, under Watershed Restoration Management Actions / Direction,  
2nd bullet:

Change to read: "Focus on upgrading roads to meet ACS objectives and, where possible (considering Right-of-way agreements), remove some roads.

### **Update to Salem RMP, Appendix C : Best Management Practices**

The iterative process by which nonpoint controls including best management practices are to be selected and implemented to achieve water quality standards include: (1) design of best management practices based upon site specific conditions, technical, economic and institutional feasibility, and the water quality of those waters potentially impacted; (2) monitoring to ensure that practices are properly designed and applied; (3) monitoring to determine: a) the effectiveness of practices in meeting water quality standards, and b) the appropriateness of water quality criteria in reasonably assuring protection of beneficial uses; and (4) adjustment of best management practices when it is found that water quality standards are not being protected to a desired level and/or possible adjustment of water quality standards based upon considerations in 40 Code of Federal Regulations 131. The following revisions for Appendix C BMP's, based on monitoring, are adopted as RMP clarification. **(BOLD ARE ADDED ITEMS)**

#### II. Roads

##### C. Design of Cross Drains

1. Design placement of all cross drains to avoid discharge onto erodible (unprotected) slopes or directly into stream channels. Provide a buffer or sediment basin between the cross drain outlet and the stream channel. **Provide a half culvert or downspout on erosive fills. This would include most fills of sufficient height and built from material other than rock.**
2. Locate culverts or drainage dips to avoid outflows onto unstable terrain such as headwalls, landslide features or block failure zones. **Provide adequate culvert spacing to avoid accumulation of water in ditches and accelerated water erosion in ditches. At a minimum apply standard District specifications for relief culvert replacement. These include orientation of culvert; skew should equal approx 30 degrees while grade should be at least 2% greater than the grade of ditch. Consider developing watershed specific spacing based on precipitation, soils , ditch grade and length.**
9. Use slotted riser inlets in areas with highly erosive soils and fine debris to prevent culvert plugging.

##### D. Design of Stream Crossings

1. Pipe arch culverts are appropriate on most fishery streams. Bottomless arch culverts and bridges will be necessary in some instances where gradients greater than five percent, stream discharge, and value of the fishery resource dictate that special engineering considerations are

necessary to ensure uninterrupted fish passage. **Consider utilize pipe arches and concrete box culverts in design when excessive debris and bedload is expected. Design width to include all of active channel.**

2. Use the theoretical 100-year flood as design criteria for pipe arches or culverts. **Design width to include active channel. On crossings with historical debris and bedload movement consider design for a hardened inlet, outlet and road surface to allow material to pass and protect road.**
  8. **Low ford stream crossings are appropriate when crossings are historically subject to landslide, debris and bedload impacts** or when conditions make it impractical or uneconomical to use a permanent or temporary crossing structure.
- F. Road Renovation/Improvement
4. Identify ditch line and outlet erosion caused by excessive flows and add necessary drainage facilities and armoring. **Add additional relief culverts to meet a minimum standard distance per ditch grade as a storm proofing upgrade.**
  5. Replace undersized culverts and repair damaged culverts and down spouts. **Dented and damaged inlets should be repaired to allow free flow of original diameter. Use channel width as a determinate of pipe size on stream culverts. Keep inlet channels as narrow as possible.**
  13. Inventory cut and fill slopes for revegetation needs and plan and implement the necessary seeding, fertilizing, hydro mulching, netting, mulching, and/or planting native trees or shrubs in order to avoid erosion, ditch and culvert plugging.
- G. Maintenance
5. **Retention of vegetation on cut and fill slopes is a priority for soil stabilization.** Retain vegetation on cut slopes unless it poses a safety hazard or restricts maintenance activities. Accomplish roadside brushing by cutting vegetation rather than pulling it out and disturbing the soil. Clean cutslope landslides using methods designed to minimize vegetation loss.

## Updated Information

The following updated GIS databases are adopted as new baselines for management decisions: 1) Land Use Allocations; 2) Land Lines (ownership); 3) Forest Operations Inventory, 4) Vegetation, and 5) Timber Productivity Capability Classification. Other GIS databases brought into conformance with these base themes will automatically be adopted upon completion.

**There were no other updated Information or correction of errors and omissions for FY98.**

# **MONITORING**

## **Salem District implementation monitoring**

Implementation monitoring was based on a process developed by the Salem District CORE team. The original basis was Appendix J of the ROD/RMP, but questions from the interagency monitoring effort were also incorporated or used to clarify issues of concern during FY 96. In both FY97 and FY 98, the CORE revised and improved the questions to facilitate monitoring. Three district monitoring teams, one to monitor each resource area were identified. The teams consisted of district CORE team members, resource area representatives and Operations Support Team members. The monitoring teams selected projects for monitoring and prepared individual resource area reports based on the evaluation of the results. Detailed information on the monitoring process is available for review in the Salem District Office. A summary of the district FY 98 monitoring results follows this general monitoring discussion.

## **Province level implementation monitoring**

Two separate teams, one to monitor the Willamette Province and one to monitor the Coast Range Province, were selected to complete the second year of Province level implementation monitoring. There were federal agency representatives and community members on the team. The teams addressed from 114 revised and improved questions on randomly selected timber sales (greater than 1 million board feet), roads associated with those timber sales and a pilot effort to monitor landscape scale activities. Within Salem District, one timber sale (Gidget) was monitored in the Coast Province and none in the Willamette Province. In addition, the Nestucca Watershed was monitored for the pilot landscape monitoring effort. Specific results can be seen in the report titled, "Results of the FY 1998 Implementation Monitoring Program", which should be available from REO later this year, or, individual reports may be reviewed at the Salem district office.

## **Effectiveness monitoring**

Effectiveness monitoring is a longer range program than implementation monitoring, and time must pass to measure many of the factors of concern. The Salem District is assisting the Siuslaw National Forest and Pacific Northwest Experiment Station, to develop a Pilot Effectiveness Monitoring Plan for the Coast Province. This will continue into FY 1999. Results will provide direction to the interagency effort at REO. In addition, Salem District is continuing development of a district level effectiveness monitoring program. Meanwhile, there are several effectiveness monitoring efforts within the district which have been ongoing for some time, which are discussed below.

Notable effectiveness monitoring was conducted during 2 phases of inventory following the flood events of February 1996. A report on the 1996 Flood Assessment (in entirety)

is available at the Salem District. A narrative summary, and excerpts of results involving BMP assessment, including recommendations for BMP adjustment, are included in Appendix 8. This flood offered a unique opportunity to assess the effectiveness of BMP's and ACS restoration when exposed to a catastrophic events.

FY1998 represents the 4th year of BMP effectiveness monitoring on the McCully Mtn timber sale in the Cascade R.A. This paired watershed study includes monitoring for changes in stream flow, sediment and temperature. Harvest and roading activities concluded and implementation of BMP's occurred in 1997. Data analysis and initial reporting is expected in 1999. Water temperature monitoring on sites throughout the district (as part of 303d monitoring) has demonstrated the effectiveness of riparian reserves in maintaining and reducing stream temperature. Temperature monitoring of complex debris jams has also revealed the effectiveness of temperature reduction realized by floodplain development in and around large wood jams.

# **FY 98 IMPLEMENTATION MONITORING SUMMARY REPORT SALEM DISTRICT**

## **Introduction**

There are three types of monitoring required under the Northwest Forest Plan (NFP) and the Salem District Resource Management Plan (RMP); implementation, effectiveness and validation monitoring. Implementation monitoring determines if the standards and guidelines (S&Gs) are being followed, generally by evaluation of selected projects to determine if they were consistent with direction in the management plan. Effectiveness monitoring is a longer term view, evaluating whether application of the management plan achieved the desired goals, or if the objectives of the Standards & Guidelines were met. Validation monitoring determines if underlying management assumptions used in the plan were correct. Effectiveness and validation monitoring are more research oriented and are long term projects. This report is limited to implementation monitoring of projects on the Salem District which were completed in Fiscal Year (FY)1998.

To put the results of the FY98 implementation monitoring into perspective, each of the 44 selected project units was evaluated against 66 questions. There was a total of 2904 individual responses, of which only 21 (<1%) were "No" or "Does Not Meet". Of the 44 Units monitored, 32 (73%) met all S&Gs, district policies and district documentation requirements. The other 12 units had a variety of results, ranging from a single question missed (6 projects) to 4 questions missed (1 project) (See appendix 16). This is a notable improvement over FY97 monitoring results, which had 100 missed questions (as many as 10 on some units) and which had 21 units with some discrepancies compared to 12 in FY98. These results reflect, to a significant degree, successful application of the 1996 and 1997 district monitoring recommendations. Monitoring team members reported that those FY98 monitored projects which had been planned recently, with tracking forms and other recommendations implemented, met all S&Gs.

The most noteworthy improvements were: 1) There were no discrepancies dealing with identification of existing streams or identification of riparian reserves; 2) There were no discrepancies dealing with special status species or T&E species consultation; and 3) Concerns in Watershed Analysis were being considered in NEPA documents.

A Tracking form was developed by the district in FY97. This optional form has been adapted by the resource areas for FY98 projects. As noted above, utilization of the tracking form has eliminated many of the documentation and implementation discrepancies identified in previous years monitoring.

Following is a list of the questions which had either a "No" or a "Does Not Meet" response. They are listed in two groups: Documentation deficiencies and Implementation errors. The ratings are primarily tools to help monitoring teams identify areas that need improvement and are not necessarily an accurate reflection of overall status. For example, a "Does Not Meet" rating could result if documentation was lacking in sufficient detail for the team to make an assessment. This may or may not be reflected on the ground in terms of biologic effect. No response stands alone, but must

be considered with the remarks made by the team and their context. This information is found in project reports in the district office.

**DOCUMENTATION DEFICIENCIES:** The Salem District added numerous documentation requirements to the implementation monitoring questions. This was done to assure that we evaluated all issues and to help complete monitoring more efficiently. Thus, this group of responses is more of a “pulse check” on how we are doing at improving our documentation. It is important to note that they are not violations of NEPA, but deficiencies in documenting supporting evidence for decisions. For example, one monitoring team found that issues had been considered and discarded for good reason, but the ID Team had not documented the process. The monitoring teams noted that many of the FY 98 projects were completed under NEPA documents prepared prior to development of the revised district documentation policy and monitoring questions. Generally, the projects prepared under recently developed NEPA documents tended to be the projects that met all standards & guidelines. We noted a significant decrease in documentation deficiencies, particularly in silviculture projects.

Q5. One project did not clearly define and stipulate proposed activities in the riparian reserves.

Wildwood Recreation Site Repairs and Maintenance did not document these items sufficiently.

Q6. Two projects did not document how the project met ACS objectives.

This applies to the Wildwood Recreation Site Repairs and Maintenance and the Tobe West timber sale.

Q36. Seven projects did not identify all of the potentially affected beneficial uses in the EA.

This was one area of increased discrepancies and will be a primary area of concern in future monitoring. In some cases the effects were insignificant, but in others important beneficial uses were missed and effects were potentially more serious. See appendix 16 for units with this discrepancy.

Q37. One project did not identify appropriate BMPs to mitigate potential impacts to beneficial uses.

This is tied to the failure to identify some beneficial uses as noted in Q36.

Over the last 3 years the District has focused attention on Best Management Practice (BMP) review primarily during implementation monitoring. This has involved assessment of BMP identification, design and implementation. Monitoring has indicated that the district has a good record of implementing design features (BMP's) identified in Environmental Assessments. In most cases these have been designed according to the risks to and needs of the beneficial uses. In previous years, the exception to this has occurred with Categorical Exclusions (salvage operations and road maintenance) which occur over large areas and do not have site specific BMP's. Beneficial use

identification is primary to designing appropriate BMP's and identifying potential impacts.

Q44. Two projects did not identify potential adverse impacts to fish habitat and fish stocks in the EA.

This involved Cedar Creek Thinning and Road Maintenance.

Q45. One project did not identify fish related design features and mitigation measures in the EA.

This involved the Cascade Streamwatch project.

## IMPLEMENTATION ERRORS

Q7. Two projects were implemented inconsistent with the EA or decision.

During implementation of Cascade Steamwatch and the Gidget timber sale riparian unit, activities occurred that were inconsistent with the decision and or prescriptions.

Q20. One salvage timber sale project in a recreation site within an LSR was not designed to retain CWD.

The Yellow Bottom Park Salvage did not retain CWD after falling hazard trees.(NFP C15)

Q31. One timber sale unit failed to retain and protect existing CWD during harvest.

On the Gidget timber sale(Regen. unit), some (about 8 MBF) existing CWD was moved or removed by the logger. The R.A. mitigated the problem by buying back CWD to leave on site.

Q38. One project did not implement the designed BMPs.

Cascade Streamwatch failed to implement all designed BMPs.

Over the past 3 years, 104 projects have been monitored for BMP implementation. Monitoring results show that in 102 of those projects we implemented the designed BMP's. In 2 of the projects, operation during wet season conditions occurred. This can be expected periodically as prediction of weather in relation to timing of actions is difficult.

Q43. One project did not identify and protect special habitat within the project.

Warnick Falls project failed to identify several special habitats within the project area. No detrimental effects resulted.

Q46. One project did not implement the fish related design features and mitigation measures.

Cascade Streamwatch compromised seasonal design features during implementation, allowing in-stream work during sensitive seasons.

# SALEM DISTRICT FY98 ANNUAL PROGRAM SUMMARY APPENDICES

Glossary

Acronyms

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Appendix 3	Regeneration Harvest Volume - A Decadal Perspective
Appendix 4	Thinning / Density Mgt. Harvest Volume - A Decadal Perspective
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Appendix 8	February 1996 Flood Assessment - Salem District
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Appendix 24	Resident Labor Force, Employment by Industry, Salem Metropolitan Area (Polk and Marion Counties)
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Table A-1	Successful Best Management Practices, Flood 96
Table A-2	BMP Update Recommendations based on Flood 96

## **GLOSSARY**

**AMA - Adaptive Management Area** - The Salem District's Northern Coast AMA is managed to restore and maintain late-successional forest habitat while developing and testing new management approaches to achieve the desired economic and other social objectives.

**Allowable Sale Quantity (ASQ)** - an estimate of annual average timber sale volume likely to be achieved from lands allocated to planned, sustainable harvest.

**Anadromous Fish** - Fish that are hatched and reared in freshwater, move to the ocean to grow and mature, and return to freshwater to reproduce. Salmon, steelhead, and shad are examples.

**Archaeological Site** - A geographic locale that contains the material remains of prehistoric and/or historic human activity.

**Area of Critical Environmental Concern (ACEC)** - An area of BLM administered lands where special management attention is needed to protect and prevent irreparable damage to important historic, cultural or scenic values, fish and wildlife resources, or other natural systems or processes; or to protect life and provide safety from natural hazards.

**Best Management Practices (BMP)** - Methods, measures, or practices designed to prevent or reduce water pollution. Not limited to structural and nonstructural controls and procedures for operations and maintenance. Usually, BMPs are applied as a system of practices rather than a single practice.

**Biological Diversity** - The variety of life and its processes, including a complexity of species, communities, gene pools, and ecological function.

**Candidate Species** - Plant and animal taxa considered for possible addition to the List of Endangered and Threatened Species. These are taxa for which the Fish and Wildlife Service has on file sufficient information on biological vulnerability and threat(s) to support issuance of a proposal to list, but issuance of a proposed rule is currently precluded by higher priority listing actions.

**Cavity Nesters** - Wildlife species, most frequently birds, that require cavities (holes) in trees for nesting and reproduction.

**Commercial Thinning** - The removal of merchantable trees from a stand to encourage growth of the remaining trees.

**Connectivity** - The Connectivity / Diversity lands are specific blocks spaced throughout the matrix lands, which have similar goals as matrix but have specific Standards & Guidelines which affect their timber production. They are managed on longer rotations (150 years), retain more green trees following regeneration harvest (12-18) and must

maintain 25-30 percent of the block in late successional forest.

**Cubic Foot** - A unit of solid wood, one foot square and one foot thick.

**Cumulative Effect** - The impact that results from identified actions when they are added to other past, present, and reasonably foreseeable future actions regardless of who undertakes such other actions. Cumulative effects can result from individually minor but collectively significant actions taking place over a period of time.

**Density Management** - Cutting of trees for the primary purpose of widening their spacing so that growth of remaining trees can be accelerated. Density management harvest can also be used to improve forest health, to open the forest canopy, or to accelerate the attainment of old growth characteristics, if maintenance or restoration of biological diversity is the objective.

**District Designated Reserves (DDR)** - Areas designated for the protection of specific resources, flora and fauna, and other values. These areas are not included in other land use allocations nor in the calculation of the ASQ.

**Eligible River** - A river or river segment found, through interdisciplinary team and, in some cases interagency review, to meet Wild and Scenic River Act criteria of being free flowing and possessing one or more Outstandingly Remarkable Values.

**Endangered Species** - Any species defined through the Endangered Species Act as being in danger of extinction throughout all or a significant portion of its range and published in the Federal Register.

**Environmental Assessment (EA)** - A systematic analysis of site-specific BLM activities used to determine whether such activities have a significant effect on the quality of the human environment; and whether a formal Environmental Impact Statement is required; and to aid an agency's compliance with NEPA when no EIS is necessary.

**General Forest Management Area (GFMA) (See Matrix)** - This is the federal land not encumbered by any other land use designation, on which most timber harvest and silvicultural activities will be conducted.

**Harvested Volume or Harvested Acres** - Refers to timber sales where trees are cut and taken to a mill during the fiscal year. Typically, this volume was sold over several years. This is more indicative of actual support of local economies during a given year.

**Hazardous Materials** - Anything that poses a substantive present or potential hazard to human health or the environment when improperly treated, stored, transported, disposed of or otherwise managed.

**Land Use Allocation (LUA)** - Allocations which define allowable uses / activities,

restricted uses / activities and prohibited uses / activities. Each allocation is associated with a specific management objective. Those discussed below include Matrix (or GFMA), Connectivity, LSR and AMA.

**Late-Successional Forests** - Forest seral stages that include mature and old growth age classes.

**LSR - Late Successional Reserve** - lands which are managed to protect and enhance old-growth forest conditions.

**Matrix Lands** - Federal land outside of reserves and special management areas that will be available for timber harvest at varying levels.

**MMBF** - abbreviation for million board feet of timber

**Noxious Plant/Weed** - A plant specified by law as being especially undesirable, troublesome, and difficult to control.

**O&C Lands** - Public lands granted to the Oregon and California Railroad Company, and subsequently revested to the United States, that are managed by the Bureau of Land Management under the authority of the O&C Lands Act.

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**Recreational River** - A river or section of a river readily accessible by road or railroad, that may have some development along its shorelines, and that may have undergone some impoundment or diversion in the past. Designated recreational as part of the National Wild and Scenic Rivers System.

# SALEM DISTRICT FY98 ANNUAL PROGRAM SUMMARY APPENDICES

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Appendix 3	Regeneration Harvest Volume - A Decadal Perspective
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## **GLOSSARY**

**AMA - Adaptive Management Area** - The Salem District's Northern Coast AMA is managed to restore and maintain late-successional forest habitat while developing and testing new management approaches to achieve the desired economic and other social objectives.

**Allowable Sale Quantity (ASQ)** - an estimate of annual average timber sale volume likely to be achieved from lands allocated to planned, sustainable harvest.

**Anadromous Fish** - Fish that are hatched and reared in freshwater, move to the ocean to grow and mature, and return to freshwater to reproduce. Salmon, steelhead, and shad are examples.

**Archaeological Site** - A geographic locale that contains the material remains of prehistoric and/or historic human activity.

**Area of Critical Environmental Concern (ACEC)** - An area of BLM administered lands where special management attention is needed to protect and prevent irreparable damage to important historic, cultural or scenic values, fish and wildlife resources, or other natural systems or processes; or to protect life and provide safety from natural hazards.

**Best Management Practices (BMP)** - Methods, measures, or practices designed to prevent or reduce water pollution. Not limited to structural and nonstructural controls and procedures for operations and maintenance. Usually, BMPs are applied as a system of practices rather than a single practice.

**Biological Diversity** - The variety of life and its processes, including a complexity of species, communities, gene pools, and ecological function.

**Candidate Species** - Plant and animal taxa considered for possible addition to the List of Endangered and Threatened Species. These are taxa for which the Fish and Wildlife Service has on file sufficient information on biological vulnerability and threat(s) to support issuance of a proposal to list, but issuance of a proposed rule is currently precluded by higher priority listing actions.

**Cavity Nesters** - Wildlife species, most frequently birds, that require cavities (holes) in trees for nesting and reproduction.

**Commercial Thinning** - The removal of merchantable trees from a stand to encourage growth of the remaining trees.

**Connectivity** - The Connectivity / Diversity lands are specific blocks spaced throughout the matrix lands, which have similar goals as matrix but have specific Standards &

Guidelines which affect their timber production. They are managed on longer rotations (150 years), retain more green trees following regeneration harvest (12-18) and must maintain 25-30 percent of the block in late successional forest.

**Cubic Foot** - A unit of solid wood, one foot square and one foot thick.

**Cumulative Effect** - The impact that results from identified actions when they are added to other past, present, and reasonably foreseeable future actions regardless of who undertakes such other actions. Cumulative effects can result from individually minor but collectively significant actions taking place over a period of time.

**Density Management** - Cutting of trees for the primary purpose of widening their spacing so that growth of remaining trees can be accelerated. Density management harvest can also be used to improve forest health, to open the forest canopy, or to accelerate the attainment of old growth characteristics, if maintenance or restoration of biological diversity is the objective.

**District Designated Reserves (DDR)** - Areas designated for the protection of specific resources, flora and fauna, and other values. These areas are not included in other land use allocations nor in the calculation of the ASQ.

**Eligible River** - A river or river segment found, through interdisciplinary team and, in some cases interagency review, to meet Wild and Scenic River Act criteria of being free flowing and possessing one or more Outstandingly Remarkable Values.

**Endangered Species** - Any species defined through the Endangered Species Act as being in danger of extinction throughout all or a significant portion of its range and published in the Federal Register.

**Environmental Assessment (EA)** - A systematic analysis of site-specific BLM activities used to determine whether such activities have a significant effect on the quality of the human environment; and whether a formal Environmental Impact Statement is required; and to aid an agency's compliance with NEPA when no EIS is necessary.

**General Forest Management Area (GFMA) (See Matrix)** - This is the federal land not encumbered by any other land use designation, on which most timber harvest and silvicultural activities will be conducted.

**Harvested Volume or Harvested Acres** - Refers to timber sales where trees are cut and taken to a mill during the fiscal year. Typically, this volume was sold over several years. This is more indicative of actual support of local economies during a given year.

**Hazardous Materials** - Anything that poses a substantive present or potential hazard

to human health or the environment when improperly treated, stored, transported, disposed of or otherwise managed.

**Land Use Allocation (LUA)** - Allocations which define allowable uses / activities, restricted uses / activities and prohibited uses / activities. Each allocation is associated with a specific management objective. Those discussed below include Matrix (or GFMA), Connectivity, LSR and AMA.

**Late-Successional Forests** - Forest seral stages that include mature and old growth age classes.

**LSR - Late Successional Reserve** - lands which are managed to protect and enhance old-growth forest conditions.

**Matrix Lands** - Federal land outside of reserves and special management areas that will be available for timber harvest at varying levels.

**MMBF** - abbreviation for million board feet of timber

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## Acronyms/Abbreviations

ACEC	-	Area of Critical Environmental Concern
ACS	-	Aquatic Conservation Strategy
APS	-	Annual Program Summary
BA(s)	-	Biological Assessments
BLM	-	Bureau of Land Management
BMP(s)	-	Best Management Practices
CBWR	-	Coos Bay Wagon Road
CON	-	Connectivity/Diversity Blocks
CERTs	-	Community Economic Revitalization Teams
CFER	-	Cooperative Forest Ecosystem Research
COPE	-	Coastal Oregon Productivity Enhancement project
CT	-	Commercial Thinning
CX	-	Categorical Exclusions
CWA	-	Clean Water Act
CWD	-	Coarse woody debris
DEQ(ODEQ)	-	Oregon Dept. Of Environmental Quality
DM	-	Density Management
DPS	-	Distinct Population Segment
EA	-	Environmental Analysis
EIS	-	Environmental Impact Statement
EPA	-	U.S. Environmental Protection Agency
ERFO	-	Emergency Relief Federally Owned
ERMA	-	Extensive Recreation Management Area
ESA	-	Endangered Species Act
ESU	-	Evolutionarily Significant Unit
FEIS	-	Final Environmental Impact Statement
FLPMA	-	Federal Land Policy and Management Act
FONSI	-	Finding of No Significant Impacts
FS	-	Forest Service (USFS)
FY	-	Fiscal Year
GFMA	-	General Forest Management Area
GIS	-	Geographic Information System
GTR	-	Green Tree Retention
IDT	-	Interdisciplinary Teams
LSR	-	Late-Successional Reserve
LUA	-	Land Use Allocation
LWD	-	Large Woody Debris
MMBF	-	Million board feet
MOA	-	Memorandum of Agreement
MOU	-	Memorandum of Understanding
NEPA	-	National Environmental Policy Act
NFP (NFWP)	-	Northwest Forest Plan
NMFS	-	National Marine Fisheries Service
O&C	-	Oregon and California Revested Lands
ODF	-	Oregon Department of Forestry
ODFW	-	Oregon Department of Fish and Wildlife
OSU	-	Oregon State University
PACs	-	Province Advisory Councils
PD	-	Public Domain
PGE	-	Portland General Electric
PILT	-	Payment in lieu of taxes
PL	-	Public Law
PSQ	-	Probable Sale Quantity

RA	- Resource Area
REO	- Regional Ecosystem Office
RIEC	- Regional Interagency Executive Committee
RMP	- Resource Management Plan
RMP/ROD	- The <i>Salem District RMP and Record of Decision</i>
RO	- FS Regional Office
ROD	- Record of Decision
RPA	- Reserve Pair Area
RR	- Riparian Reserve
R/W	- Right-of-Way
SEIS	- Supplemental Environmental Impact Statement
S&G	- Standard and Guideline
S&M	- Survey and Manage
SRMA	- Special Recreation Management Area
TMO	- Timber Management Objective(s)
TMP	- Transportation Management Plan
TPCC	- Timber Productivity Capability Classification
UO	- University of Oregon
USDA	- U.S. Department of Agriculture
USFS	- U.S. Forest Service
USFWS	- U.S. Fish and Wildlife Service
WC	- Watershed Council
WFSA	- Wildfire Situation Analysis
WQMP	- Water Quality Management Plan

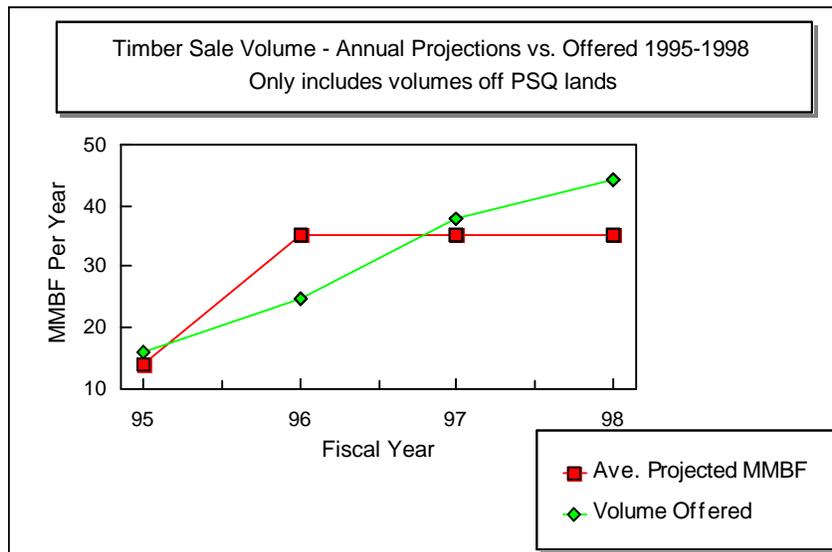
**Appendix 1 - Timber Sale Volumes - Annual Projections vs. Offered FY 95-98\***

Land Use Allocation	Volume(MMBF)*				
	Projected** @ Full ASQ	Offered FY 95***	Offered FY 96	Offered FY 97	Offered FY 98
AMA	1.95	2.209	1.779	5.549	0.425
Matrix (GFMA)	29.75	13.843	22.293	29.659	42.574
Conn.	3.11	0	0	.632	0
Misc.Vol. from Above LUAs	0	.139	.723	2.120	1.369
<b>Total Volume off ASQ lands</b>	<b>34.81</b>	<b>16.191</b>	<b>24.795</b>	<b>37.960</b>	<b>44.368</b>
LSR volume (Density Mgt.)	N/A	0	2.606	0	0
RR volume (Density Mgt.)	N/A	.072	1.618	4.396	1.328
Misc. Volume (LSR, RR)	N/A	.223	.122	1.062	.187
<b>Total Volume off Non-ASQ lands</b>	<b>N/A</b>	<b>.295</b>	<b>4.346</b>	<b>5.458</b>	<b>1.515</b>
<b>Total volume offered</b>	<b>N/A</b>	<b>16.486</b>	<b>29.141</b>	<b>43.418</b>	<b>45.883</b>
District Budget target volume	N/A	23	29	35	35

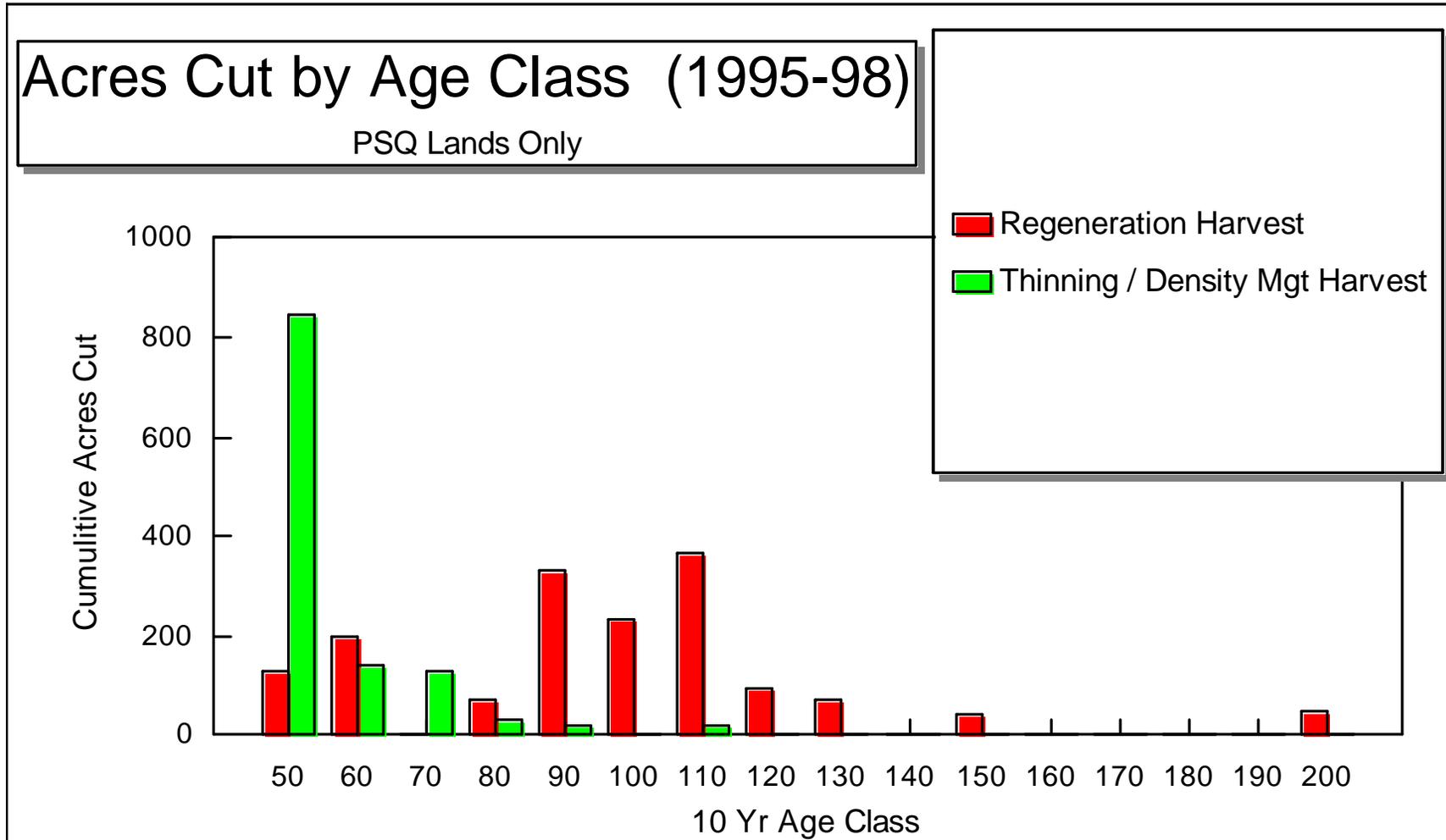
\* MMBF = million board feet    \*\* Projected figures are 1/10th of the decadal projection

\*\*\* FY95 volumes from date of RMP signing in May, 1995.

Volumes in Appendix 1 are cumulation of Volumes in App. 3 & 4 plus Miscellaneous volume.



## Appendix 2 - Acres Cut By Age Class (1995-1998)



Data includes sales from May 95 RMP signature date to present

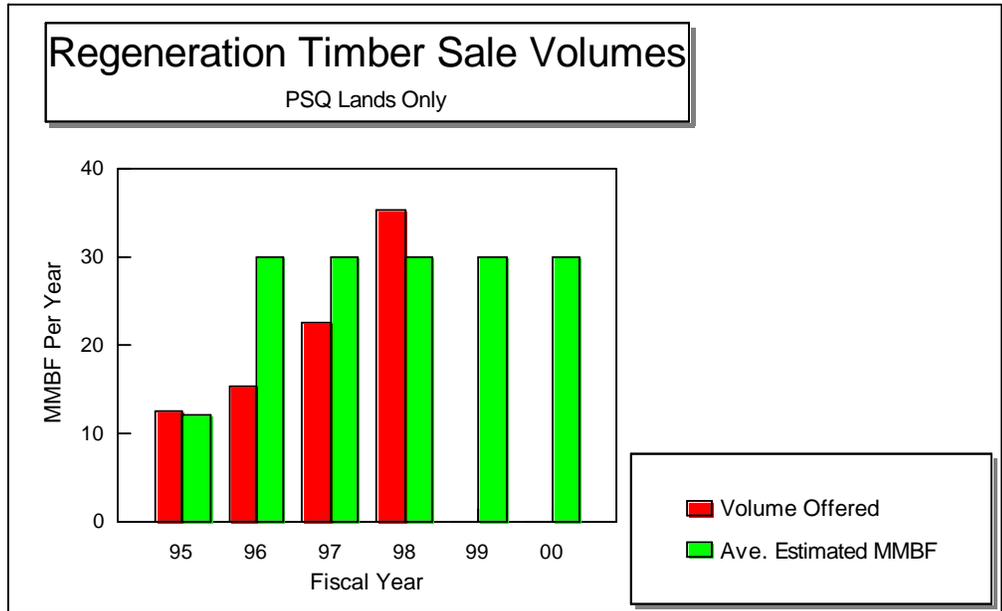
### Appendix 3 - REGENERATION TIMBER SALE VOLUME

Comparison of projected vs. offered volume by Land Use Allocation (LUA)  
FY 95-98

Land Use Allocation	District MMBF* Offered FY 95**	District MMBF Offered FY 96	District MMBF Offered FY 97	District MMBF Offered FY 98	Total District Cumulative MMBF Offered FY 95-98	Total District Projected MMBF For Decade 1995-2005
Matrix(GFMA)	12.451	15.343	22.230	35.232	85.256	274.5
Connectivity	0	0	0.276	0	0.276	24.1
LSR**	0	0	0	0	0	N/A
AMA**	0	0	0	0	0	N/A
Totals	12.451	15.343	22.506	35.232	85.532	298.6

\* MMBF = million board feet \*\* FY95 only includes sales AFTER May RMP decision date.

\*\*\* No regeneration harvest projected in LSR or AMA

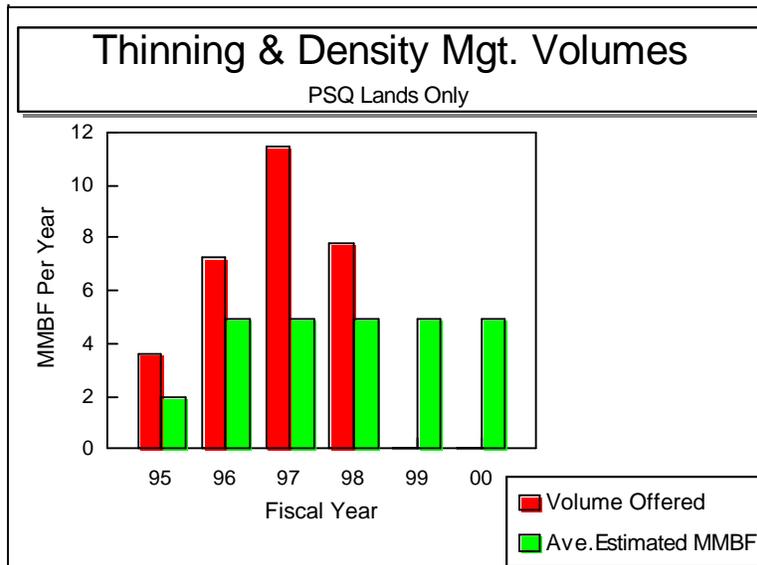


## Appendix 4 - THINNING & DENSITY MGT. VOLUME

Comparison of projected vs. offered Volume by Land Use Allocation (LUA)  
FY 95-98

Land Use Allocation	District MMBF* Offered FY 95**	District MMBF Offered FY 96	District MMBF Offered FY 97	District MMBF Offered FY 98	Total District Cumulative MMBF Offered FY 95-98	Total District Projected MMBF For Decade 1995-2005
Matrix*** (GFMA)	1.392	6.950	7.429	7.342	23.113	23.044
Connectivity***	0	0	0.356	0	0.356	6.952
AMA****	2.209	0.281	3.634	0	6.124	19.477
Total ASQ	3.601	7.231	11.419	7.342	29.593	49.473
Riparian Reserve	0.072	1.618	4.396	1.328	7.414	N/A*****
LSR	0	2.606	0	0	2.606	N/A*****
Total Non-ASQ	.072	4.224	4.396	1.328	10.020	N/A*****
Totals	3.673	11.455	15.815	9.095	40.038	49.473

\* MMBF = million board feet    \*\* FY95 only includes sales AFTER May RMP decision date  
 \*\*\*Commercial thinning projected in these LUAs.    \*\*\* Density Management projected in AMAs  
 \*\*\*\*\* No projections made for LSR / RR.

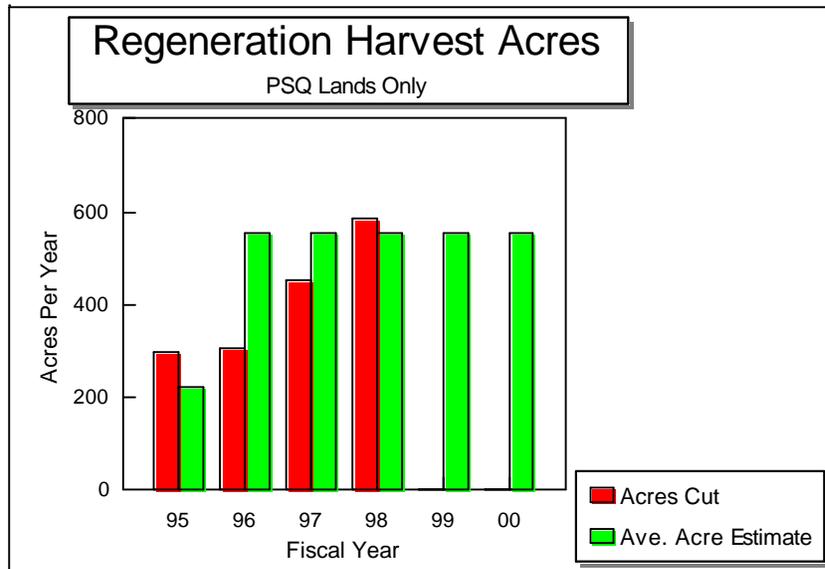


## Appendix 5 - REGENERATION HARVEST ACRES

Comparison of projected vs. offered harvest acres by Land Use Allocation (LUA)  
FY 95-98

Land Use Allocation	District Acres Offered FY 95	District Acres Offered FY 96	District Acres Offered FY 97	District Acres Offered FY 98	Total District Cumulative Acres Offered FY 95-98	Total District Projected Acres For Decade 1995-2005
Matrix(GFMA)	298	306	439	586	1629	4971
Connectivity	0	0	12	0	12	587
LSR*	0	0	0	0	0	N/A
AMA*	0	0	0	0	0	N/A
Totals	298	306	451	586	1641	5558

\* No regeneration harvest projected in LSR or AMA

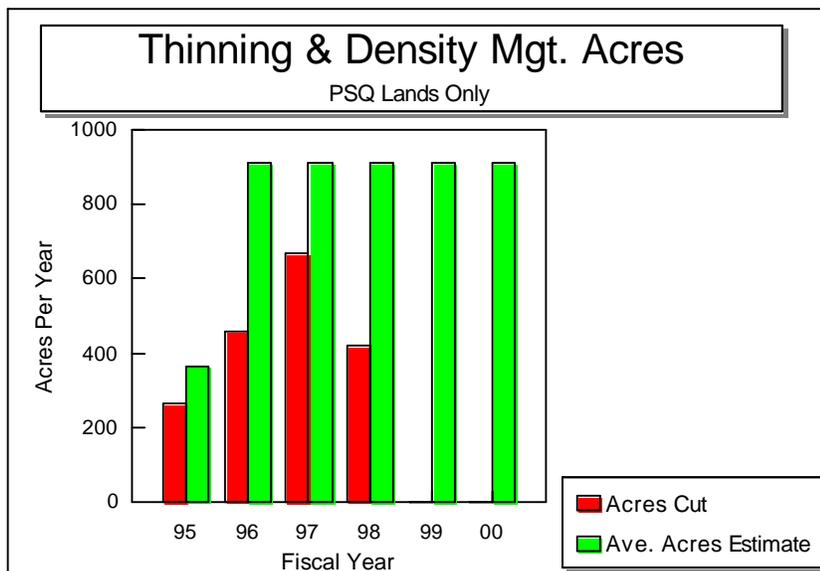


## Appendix 6 - THINNING & DENSITY MGT. ACRES\*

Comparison of projected vs. offered acres by Land Use Allocation (LUA)  
FY 95-98

Land Use Allocation	District Acres Offered FY 95	District Acres Offered FY 96	District Acres Offered FY 97	District Acres Offered FY 98	Total District Cumulative Acres Offered FY 95-98	Total District Projected Acres For Decade 1995-2005
Matrix** (GFMA)	76	439	443	422	1380	2920
Connectivity**	0	0	25	0	25	736
AMA***	191	18	200	0	409	2141
<b>Total ASQ lands</b>	<b>267</b>	<b>457</b>	<b>668</b>	<b>422</b>	<b>1814</b>	<b>5797</b>
LSR***	0	173	0	0	173	3316
RR	19	88	244	71	422	None
<b>Total Non-ASQ lands</b>	<b>19</b>	<b>261</b>	<b>244</b>	<b>71</b>	<b>595</b>	<b>3316</b>
<b>Totals</b>	<b>286</b>	<b>718</b>	<b>912</b>	<b>493</b>	<b>2409</b>	<b>9113</b>

\* Information from TSIS \*\* Commercial thinning projected in these LUAs. \*\*\* Density Management projected in AMAs.



## Appendix 7 - Comparison of intensive silviculture practices - Model projections vs. Actual

Silviculture Practice	Annual Projected Amount (acres)	Actual Amount (Acres) Accomplished in FY 96	Actual Amount (Acres) Accomplished in FY 97	Actual Amount (Acres) Accomplished in FY 98
Site preparation / Prescribed fire*	480	352	232	330
Site preparation / other*	590	51	159	454
Maintenance / protection**	3130	2716	2632	1902
Release / Precommercial thinning (PCT)**	2970	3033	1509	1177
Stand conversion**	90	0	0	0
Plant regular stock*	480	338	542	333
Plant genetic stock*	450	290	143	186
Fertilization**	600	0	0***	1671
Pruning	None projected	0	59	169

\* These particular items are directly related to acres harvested. Funding was sufficient to complete all available acres.

\*\* These items are related to need and budget levels, so actual amounts will vary from year to year. Funding has been sufficient to complete all available acres during FY96-98.

\*\*\* A contract for 1671 acres was awarded during FY97 but completion did not occur until FY98.

## **Appendix 8 - February 1996 Flood Assessment; Salem District**

### **Abstract:**

During the period of February 3 - 9, 1996, northwest Oregon experienced near record rainfall with heavy snow in the mountains followed by record high temperature and rapid snow melt. This set the stage for catastrophic landsliding and flooding which had significant impacts to forest management facilities on the Salem District BLM. These impacts were highly variable across the landscape due a wide range in magnitude, duration and intensity of the precipitation pattern. As a response, flood flows and their effects varied widely from watershed to watershed.

During March and April following the flood, the Salem District conducted an extensive inventory of damage and impacts as part of a Regional Assessment known as *Phase 1*. The results of this assessment allowed identification of where the greatest damage occurred and also recognition of the causal mechanisms for the damage. On BLM land in the Salem District, a total of 413 landslides (>100 cu yds) were recorded. Of this total, 218 landslides were directly related to roads. The Quartzville, Molalla, Nestucca, Wilson and Lobster Creek watersheds sustained the greatest number of landslides and magnitude of channel impacts. This data combined with regional data helped to formulate a *Phase 2* assessment which intensively focused on four regional issues; *road and stream crossing performance, channel structure performance, weather patterns during the storm and specific watershed performance*.

During the summer of 1996 the Salem BLM participated in collecting the data for assessment of “*road and stream crossing performance*”. Objectives of the assessment included identification of the mechanisms for success or failure in withstanding flood effects. The Salem District added to this by including an assessment of relief culvert performance and a review of Best Management Practices (BMP’s) involved with the road / stream crossing inventory. The results of this assessment serve as “effectiveness” feedback on BLM’s Best Management Practices in terms of road design, construction and maintenance involving stream and relief culvert crossings. **This information and consideration of recommendations are an important component and responsibility of the BLM (Designated Agency) under the Clean Water Act.** This assessment also offers perspective on present practices in relation to attainment of the Aquatic Conservation Strategy objectives of the North West Forest Plan.

The following provides an excerpt of the original phase 1 & 2 report. This excerpt focuses on the *Phase 2* assessment concerning roads and stream crossings and includes the summary on BMP performance assessment and recommendations.

## **Phase 1: 1996 Flood Assessment**

A regional assessment of flood impacts, known as *Phase 1*, began in late March through April of 1996. Regional guidelines for conducting the *Phase 1* assessment were developed through an interagency effort and were intended to be an “extensive” not “intensive” inventory. The objective was to generally characterize impacts, summarize where they occurred by basin, and provide direction for a *Phase 2* “intensive” inventory. This regional assessment methodology was conducted by the Salem District CORE team on BLM lands within the Salem District.

The month long inventory was conducted primarily on the ground, driving and walking the road network throughout the district. Because of the need to rapidly access the area in an efficient manner, this inventory primarily recorded sites which could be seen from or were associated with the road system. The inventory was “biased” in this respect as channels and forested areas with no vista or road access may not have been included. In an attempt to provide a more complete inventory and reduce this bias, the inventory was also conducted from a helicopter in the un-accessible areas of the Cascade Range. The inventory targeted the watersheds which were known to have the greatest impacts. As a result, approximately 61% of the total district lands were inventoried. Despite the lack of full coverage, the crew felt the data was a realistic representation of conditions in the areas inventoried.

In total, 413 landslides (>100 cu yds) were recorded, with 87% of those reaching stream channels. Of this total, 41 were estimated to be greater than 10,000 cu. yds. with each of these reaching the stream channel and depositing an unquantifiable but significant amount of sediment. Each of the 413 landslides were assessed in relation to cause, which is problematic as in many cases there is more than one cause. In terms of the assessment teams judgement, 219 (53%) of the total were clearly road related. The assessment also indicated that the impacts which occurred were scattered, that is not all watersheds on the district responded in similar fashion to the “regional” storm event. The Quartzville, Molalla, Nestucca, Wilson and Lobster Creek watersheds sustained the greatest (in numbers) impacts. This conforms with climatic and streamflow data which showed variability across the region dependant on the intensity , magnitude and duration of the rainfall event.

Salem District completed the *Phase 1* assessment on April 31. 1996. A report was submitted to the regional assessment team along with recommendations for *Phase 2*. Personal communication from the regional assessment team and subsequent meetings to discuss the results had indicated that similar patterns of impacts and damages were occurring in the region. Data indicated that roads deserved a closer look and that the patterns of impacts seemed to follow storm cells.

## **Phase 2: 1996 Flood Assessment**

During the summer of 1996, the Salem District Core team conducted the road crossing performance inventory in conformance with regional direction at the time. The team chose to modify the stream-crossing inventory to include characteristics intended to answer questions which were identified during the *Phase 1* inventory and also those provided during internal district review. The following is a summary of the objectives for this assessment at both levels.

### **Regional Objectives:**

#### **To identify:**

- 1) the most common mechanisms for **stream crossing** failure.
- 2) how **road/stream crossing** design, construction and maintenance influences failure.
- 3) the **impacts** associated with **road failure**.
- 4) how **upstream & up slope conditions** affect crossing performance.

### **Salem District Objectives:**

#### **added to the above objectives:**

#### **To identify:**

- 5) the most common mechanisms for **relief culvert** failure
- 6) how **relief culvert** design, construction and maintenance influences failure.
- 7) what **BMP's** were successful or may have avoided the impacts associated with roads.
- 8.) a link between failures/success and the age of practices (ie. Pre - MFP vs Post - MFP)
- 9) the incidence of failures not associated with roads.

### **Methods:**

In order to try and achieve these objectives a expanded inventory method and form was built which incorporated Regional direction and Salem District needs. The district was stratified into zones where flooding impacts were greatest namely the Lobster\Alesa basin, Nestucca , Molalla, and Quartzville watersheds. Because many elements within the inventory require assessment of undisturbed impact, roads which were already fixed were not selected. Roads that were selected still retained the original impacts from the flood. The road was considered a transect and the inventory was conducted in a continuous manner for a pre-determined distance along the road. All culverts whether successfully surviving or failing due to the flood were inventoried along that distance. Approximately 10 miles of road were inventoried. Along this road distance there have been a total of 116 successes/failures inventoried. Throughout the rest of the document these will be referred to as "events" Although not part of the Regional procedure, the team decide to include relief culverts and road prism failures

not associated with stream crossings.

The following represent pertinent Key Questions and results for RMP maintenance.

***Key Questions:***

***How did relief culvert design, construction and maintenance influences failure or success? How did conditions influence performance?***

The size of the relief culverts appeared to be adequate to handle the flows which they were designed to accommodate. The relief culvert diameters ranged from 16 to 24 in diameter, with the larger culverts in locations more recently replaced. This indicates that specifications (BMP's) have gone to larger culverts in recent years. In most of the plugged culvert situations there was a combination of elements which contributed to the problems. Active erosion up-ditch combined with excessive ditch lengths (sometimes >600 ft between relief culverts) and the orientation of the relief culvert all contributed to plugging with sediment.

Active erosion of cutbanks was most prominent in the Quartzville drainage where there are many areas of raw cut slopes in the higher elevations. This is partly due to the shallow soil and low fertility conditions indicative of the mixed volcanics of the area. This area has not received seeding efforts in recent years. In Mary's Peak and Tillamook, cut slopes and ditches tended to be well vegetated with little to no accelerated erosion occurring. Generally, the marine sediments and soft volcanic allow development of responsive seedbeds in the cut slopes.

In the Cascades there appears to be a relationship between ditch slope, ditch length and the presence of excessive ditch erosion. Where ditch slopes were measured as greater than 8% and ditches were greater than 400 ft.(on average), excessive ditch erosion occurred often plugging relief culverts. In some situations this impact cascaded from one relief culvert to the next for several thousand feet.

Many plugged pipes were oriented perpendicular the road and placed with a shallow gradient (<1%). Water "pooling" at inlets and shallow gradients produce a lower velocity of water entering and moving through the pipe. Low velocity at the entrance and in the pipe allows sediment to "settle out" before moving through. These design characteristics are predominately from older road construction practices (pre 1983/MFP).

To a large degree conditions mentioned above require continual maintenance during every winter season to keep inlets open. It becomes a self perpetuating problem. Generally, the maintenance condition just prior to the flood for the failed relief culvert sites was unknown. It was apparent that little to no seeding or hydroseeding of raw cutbanks had occurred in the sample areas of the Quartzville Creek drainage. Maintenance crews had completed hydroseeding in the Molalla River road network during 1993. Cut slopes receiving these treatments (which were part of the inventory sample) were well vegetated with reduced sediment production compared to unvegetated areas. These hydro-seeded areas had no

recorded relief culvert failure. Grassed ditches in the areas inventoried in Mary's Peak and Tillamook have contributed to the lack of erosion of ditches. The lack of grassed ditches was evident in the Quartzville sample roads. It is unclear whether this was bladed out or never established. Blading of grass out of the ditch removes protection against erosion from excessive ditchflow during intense storm runoff events.

### ***Conclusions & Recommendations:***

Although current engineering guidelines (BMP's) require relief culvert design to reduce the potential for relief culvert plugging, these guidelines have only been put to effect in the last decade. There is a significant number of roads in the district of the vintage with older construction practices and site conditions where sediment plugging is an annual event. Relief culverts should be given the same priority in upgrade and correction in terms of meeting ACS objectives and standards and guides as the channel culverts. The inventory recorded an estimate of over 5000 cu yds of material lost from the road prism due to the 19 failed relief culverts. Most of this material appeared to be transported to a stream channel and not just the downhill sideslope. Standard BMP's identifying culvert skew, minimum gradient and inlet and outlet protection should be adopted for all upgraded culverts. Cutslope and ditch sites which are known to have significant active erosion ongoing should be identified and stabilized with the same priority as the upgrading of relief culverts. Resource Areas should adopt standards by watershed for maximum ditch length per ditch slope for culvert spacing and or drainage dips. These last three recommendations should be identified in Watershed Analysis with the help of local road maintenance crews in order to incorporate local knowledge.

As with the channel culvert discussion, Resource Area participation in patrol of the actively eroding sites in the Quartzville Cr, watershed should be considered a priority before winter storms. Cut slopes with active erosion should be scheduled for hydroseeding during the fall and spring. The Salem District has the equipment to accomplish this. Seed mixtures should be provide for rapid stabilization on dry sites while being weed free. As native seeds become available include these in the site prescription.

### ***What specific BMP's were successful in avoiding the road impacts associated with the February 1996 flood? What BMP's could be used to avoid the impacts associated with the failed road crossings?***

While collecting information on stream crossing and relief culvert performance, each site was reviewed in terms of the current Best Management Practices listed in the Salem District Record of Decision and Resource Management Plan (Appendix C; Pages 2 - 8). The existing design and condition of the site was interpreted in regard to success and failure to withstand the flood impacts. BMP's that were effective in reducing or avoiding impacts were recorded for successful sites. On failed sites BMP's which could have avoided the impacts were also recorded. In general terms this constitutes an "effectiveness" inventory of BMP's. One thing to keep in mind is that many of our road systems were built using the Best Management Practices of the time period in which they were constructed. Many are outdated and are no longer part of our standard design. This flood does offer a unique opportunity to review how

these roads performed and validate the recommended BMP's contained in our management plan. The results of this assessment serves as a documentation which continues the "learning" process of BMP testing and refinement intended as a responsibility BLM has as a "Designated Agency" under the Clean Water Act.

Reporting of results follows the category reference and heading provided in Appendix C of the Salem District ROD. Table A-1 and A-2 represent only the major BMP's noted in the inventory and are excerpted. Refer to complete report for a more reference.

***Comparison with Regional Results:***

Regional analysis did not specifically address this objective. The Siuslaw analysis did cover this in terms of road stabilization performance (Bush et al., 1997). Results concluded that culvert removal appear to be successful in preventing large failures. Removal of additional fill to provide a wider channel at the culvert removal site would have eliminated most erosion problems. Culvert removal sites should leave side slopes at 1.5:1 or flatter. On the Salem District we have used a woven mulch matting on these side slopes with successful results. Waterbars were successful in controlling excess flow on roads and ditches although inadequate spacing was also noted as a shortfall. Deep waterbars showed little advantage over drivable dips. Dirt-bottomed waterbars sustained significant erosion and recommendations included armoring these with gravel.

***General BMP Recommendations:***

Watershed analysis should identify appropriate BMP's based on flood results for design of projects targeting ACS objectives and water quality issues. Road project design should consider successful BMP's in all upgrades to the road network. BMP's which are currently listed in the RMP need to be updated to reflect results of crossing performance assessment. The results should be included in any update to our RMP and the third year evaluation.

***Specific BMP Recommendations:***

1. Each stream crossing should be assessed for potential failure due to landsliding. This should occur in Watershed Analysis and as a specific issue in second iteration of WA (for those completed before the flood).
2. "High Risk" crossings should be designed to "pass" landslide material with minimal damage to road surface. Practices could include hardening the crossing with rip rap at beveled inlets and outlets while lowering the fill. "Low Risk" crossings should be designed (at a minimum) to pass the "small" pieces of wood by using channel width as a determinate of pipe diameter (along with the 100 yr design).

3. Keep inlet channels as narrow as possible to align debris material for passage through culverts.
4. Where site and biologic objectives allow, culvert gradient should exceed 10% to keep bedload moving.
5. Development of a mobilization / storm patrol plan for should be considered for each watershed and Resource Area in order to reduce the occurrence of “avoidable” stream crossing loss.
6. Crossings occurring below areas of short rotations (high % in young age class) should be given consideration in terms of high risk of landslide damage.
7. Relief culvert failures and annual culvert maintenance can be reduced through protection and enhancement of cutslopes and ditches. Relief culvert upgrade needs to be considered equal priority to channel culvert in terms of meeting ACS objectives. Drainage dips on low use roads are a cost effective alternative.
8. Annual review of cutslope and ditch conditions in terms of erosion potential should be conducted as part of maintenance. Time and money should be annually budgeted to do survey and revegetation.
9. At a minimum apply standard District specifications for relief culvert replacement. These include orientation of culvert; skew should equal approx 30 degrees while grade should be at least 2% greater than the grade of ditch. Consider developing watershed specific spacing based on precipitation, soils , ditch grade and length.
10. The Quartzville road network needs attention in terms of erosive cutslopes and ditches. The annual budget should include \$ for re-seeding/ hydroseeding until conditions are stabilized.

**Table A-1: Successful Best Management Practices, Flood 1996: Salem District**

*(Reference Salem District RMP - Appendix C)*

<b>RMP Category</b>	<b>Reference RMP ID &amp; BMP Description</b>
<b>Design of Cross Drains</b>	<b>C1 -</b> <i>Down spouts on erosive fills were very effective in avoiding accelerated erosion of road prism from high energy outlets.</i>
<b>Road Design Features</b>	<b>B15-</b> <i>Rock on running surface of roads helped to prevent significant road surface erosion even when culverts plugged and flows were diverted onto and across the running surface.</i>
<b>Design of Stream Crossings</b>	<b>D2 -</b> <i>Most relief culverts were sized to carry 100 yr event and this avoided road prism loss.</i>  <b>D8 -</b> <i>Low ford crossings were successful in passing material and flow with little damage and minor maintenance.</i>
<b>Road Improvements</b>	<b>F4 -</b> <i>Where additional relief culverts have been installed, impacts were minimal.</i>
<b>Road Maintenance</b>	<b>G5 -</b> <i>Where vegetation remained in ditches and on cut slopes, erosion and culvert plugging did not occur.</i>  <b>G6 -</b> <i>Hydroseeding was an effective stabilization method for steep cutbank slopes.</i>  <b>G3 -</b> <i>The majority of culvert inlets appeared to be maintained before the storm event.</i>

*Appendix A-2 : BMP Update recommended based on Flood Assessment  
(Reference Salem District RMP - Appendix C)*

<b>RMP Category</b>	<b>Reference ID &amp; BMP Description</b>
<b>Design of Cross Drains</b>	<p><b>C1 -</b>      <i>Use Down spouts on erosive fills. This would include most fills of sufficient height and built from material other than rock.</i></p> <p><b>C2 -</b>      <i>Provide additional relief culverts. Standard distance between culverts based on ditch gradient. Apply min. Specs for skew and grade</i></p> <p><b>C9 -</b>      <i>Use slotted risers to keep inlets free.</i></p>
<b>Design of Stream Crossings</b>	<p><b>D1&amp;5-</b>    <i>Utilize pipe arches and bridges not only for fish passage but material passage to protect investment and reduce impact risk.</i></p> <p><b>D2 -</b>      <i>Design culverts to withstand 100 yr flood and include material passage considerations.</i></p> <p><b>D7 -</b>      <i>Consider construction of low ford crossings at sites with history of debris flow</i></p>
<b>Road Improvements</b>	<p><b>F4 -</b>      <i>Add additional relief culverts to meet a minimum standard distance per road gradient as a storm proofing upgrade.</i></p> <p><b>F5 -</b>      <i>Repair damaged culvert inlets. Dents and rips due to maintenance restrict flow and promote plugging.</i></p> <p><b>F13 -</b>     <i>Re-vegetate cut slopes through seeding,</i> <b>F14</b>       <i>hydromulching, fertilizing and mulching.</i></p>
<b>Road Maintenance</b>	<p><b>G4,5 -</b>    <i>Vegetation for soil stabilization is a priority to retain on cut slopes and ditches. Clean cutslope failure using methods designed to minimize vegetation loss.</i></p> <p><b>G3,4-</b>     <i>Keep ditches and culverts free of debris during storm events.</i></p>

**APPENDIX 9 - Salem District Summary of Special Forest / Natural Product Actions and Accomplishments**

<b>RMP Authorized product sales</b>	<b>Unit of measure</b>	<b>Fiscal Year 1996 * Units/contracts/value</b>	<b>Fiscal Year 1997 Units/contracts/value</b>	<b>Fiscal Year 1998 Units/contracts/value</b>	<b>Three year TOTAL Units/contracts/value</b>
Boughs, coniferous	Pounds	120,950 pounds/ 17 contracts/ \$7,629.50	127,860 pounds/ 17 contracts/ \$6,027.50	80,950 pounds/ 22 contracts/ \$6,271.00	329,760 pounds/ 56 contracts/ \$19,928.00
Burls and miscellaneous	Pounds	0 pounds/ 0 contracts/ \$0.00	1,250 pounds/ 1 contracts/ \$200.00	0 pounds/ 0 contracts/ \$0.00	1,250 pounds/ 1 contract/ \$200.00
Christmas trees	Number	6 trees/ 3 contracts/ \$30.00	0 tree/ 0 contract/ \$0.00	1 tree/ 1 contract/ \$5.25	7 trees/ 4 contracts/ \$35.25
Edibles and medicinals	Pounds	5,058.3 pounds/ 13 contracts/ \$232.15	2,570 pounds/ 7 contracts/ \$313.70	9,827 pounds/ 10 contracts/ \$302.80	17,455.3 pounds/ 30 contracts/ \$848.65
Feed & Forage	Tons	32.8 tons/ 5 contracts/ \$491.25	22.6 tons/ 4 contracts/ \$340.00	77.7 tons/ 16 contracts/ \$1,165.52	133.1 tons/ 25 contracts/ \$1,996.77
Floral & greenery	Pounds	25,633 pounds/ 33 contracts/ \$2,053.50	56,363.5 pounds/ 63 contracts/ \$4,431.10	83,478.9 pounds/ 83 contracts/ \$10,893.90	165,475.4 pounds/ 179 contracts/ \$17378.50
Moss/bryophytes	Pounds	103,681 pounds/ 79 contracts/ \$5,170.36	256,024.5 pounds/ 150 contracts/ \$10,252.44	134,520 pounds/ 154 contracts/ \$13,422.60	494,225.5 pounds/ 383 contracts/ \$28,845.40
Mushrooms/fungi	Pounds	13,460 pounds/ 50 contracts/ \$1,234.00	18,411.2 pounds/ 124 contracts/ \$2,011.70	29,061.4 pounds/ 212 contracts/ \$3,729.60	60,932.6 pounds/ 386 contracts/ \$6,975.30
Ornamentals	Number	0 plants/ 0 contracts/ \$0.00	500 plants/ 1 contract/ \$10.00	0 / 0 contracts/ \$0.00	500 plants/ 1 contract/ \$10.00

**APPENDIX 9 - Continued**

**Salem District Summary of Special Forest / Natural Product Actions and Accomplishments**

<b>RMP Authorized product sales</b>	<b>Unit of measure</b>	<b>Fiscal Year 1996 * Units/contracts/value</b>	<b>Fiscal Year 1997 Units/contracts/value</b>	<b>Fiscal Year 1998 Units/contracts/value</b>	<b>Three year TOTAL Units/contracts/value</b>
Seed and seed cones	Bushels	276 bushels/ 3 contracts/ \$303.20	365 bushels/ 6 contracts/ \$253.00	1 bushel/ 1 contract/ \$103.75	642 Bushels/ 10 contracts/ \$659.95
Transplants	Number	5,679 plants/ 11 contracts/ \$1,425.60	4,955 plants/ 16 contracts/ \$612.23	5,021 plants/ 16 contracts/ \$1,642.00	15,655 plants/ 43 contracts/ \$3,679.83
Wood products/ firewood **	Cubic feet	58,190.6 cu ft/ 171 contracts/ \$6,850.88	36,163.7 cu ft/ 154 contracts/ \$8,792.00	88,768.5 cu ft/ 147 contracts/ \$8,286.95	183,122.8 cu ft/ 472 contracts/ \$23,929.83
<b>TOTALS</b>		-----/ 385 contracts/ \$25,420.44	-----/ 543 contracts/ \$33,243.67	-----/ 662 contracts/ \$45,823.37	-----/ 1,590 contracts/ \$104,487.48

\* - **Contract numbers** represent individual sale (or free use) actions. **Value** is in dollars per year received.

\*\* To avoid double counting, this line does not include sawtimber which is reported elsewhere.

## Appendix 10 - LANDS AND REALTY ACTIVITY FY 95-98 EXCHANGES

Name	Exchange Number	Date	Acres Acquired	Acres Conveyed	Remarks
Aims Exchange	OR50799	2/24/95	0	27.09	BLM acquired 48.80 acres is Perpetual Scenic Easement to facilitate implementation of the Sandy Wild& Scenic River Mgt. Plan.
Sandy Exchange	OR50419	3/7/95	80.85	0	5 acres of timber only conveyed in return for the acquired acreage. Acreage acquired to facilitate implementation of the Sandy Wild& Scenic River Mgt. Plan.
Rocky Top Exchange	OR50847	8/3/95	142.82	110.00	Exchange to consolidate ownership and acquire a Bald Eagle Nest Site.
River Trail Exchange	OR51155	5/7/96	154.41	80	Exchange to obtain access for proposed Molalla River Trail.
Little N.Fk.Wilson River Exchange	OR51231	6/26/96	525.01	489.93	Exchange to obtain high quality Marbled Murrelet, Spotted Owl and Salmon Habitat.
Wildwood Exchange	OR52446	3/11/98	89.07	80	Also acquired 8.12 acre Perpetual Trail Easement
Mt.Hood Corridor Exchange	OR53235	1/12/98	3531.65	1453.52	Exchange completed per Title IV of the Omnibus Consolidated Appropriations Act for FY 1997. Lands are in view shed of Mt.Hood Corridor.
Totals			4523.81	2240.54	Net Acreage increase to BLM of 2,283.27 Acres

Source: Serial Register of Realty Cases - Salem District

## Appendix 11 - LANDS AND REALTY ACTIVITY FY 95-98 LAND SALES

These land sales were isolated parcels of BLM ownership that were targeted for disposal (land tenure zone 3), or minor sales completed to resolve occupancy trespasses.

Purchaser	Serial Number	Date	Acres Sold
Peter Boden	OR51166	9/25/95	0.43
Robert Dersham	OR51291	2/23/95	0.80
Caffall Brothers	OR51890	1/9/96	2.44
Ray Johnson	OR51998	10/17/95	0.15
Clem Lulay	OR52096	5/26/96	0.19
Clara Taylor	OR52165	10/17/95	0.46
Ervin Simmons	OR52166	10/17/95	0.38
Robert Mommson	OR52644	1/24/97	0.20
Stimson Lmbr. Co.	OR53113	8/28/97	0.15
Stimson Lmbr. Co.	OR53114	8/28/97	0.60
Morrow For.Pds.	OR53115	11/19/97	1.00
Morrow For.Pds.	OR53116	11/19/97	2.10
Morrow For.Pds.	OR53117	11/19/97	2.60
City of McMinnville	OR54442	6/16/98	3.79
		Total Acres Sold	15.29 Acres

## APPENDIX 12 - Salem District FY 95-98 Watershed Restoration Projects

Type Project	Number of Projects	# in Key watersheds	# in Non-key watersheds	Miles / Acres /streams etc
Roads Closed(gates/berms)	36	11	25	128+ Miles
Roads Obliterated	10	5	5	26+ Miles
Culverts replaced	210*	32	178	634+ Culverts, 32+ Miles
roads resurfaced	18	7	11	63+ miles
Riparian Planting	10	8	2	57 Acres
Riparian density mgt	2	1	1	11 Acres
Riparian Inventory	13	3	10	17+ miles
Stream / Fish habitat inventory	73	9	64	147+ miles
New Fish structures	18	10	8	15+
Maintained fish structures	7	6	1	8+miles

Note: These numbers are rough estimates, collected from numerous individuals and from a variety of sources. They are intended only to give a general idea of where restoration efforts have been focused and the approximate level of activities in restoration work since implementation of the RMP.

\* This number is of limited value. Some contracts replaced numerous culverts. Other projects were single culverts.

**Appendix 13 - SUMMARY OF NUMBERS AND TYPES OF PROJECT UNITS  
MONITORED FY98**

Project Type	# Tillamook R.A.	# Marys Peak R.A.	# Cascades R.A.	Total # District
Timber Sales	4	3	5	12
Silviculture Projects	15	1	2	18
Riparian Projects	None Completed to monitor	None Completed to monitor	None Completed to monitor	None Completed to monitor
Fish Habitat Projects	None Completed to monitor	None Completed to monitor	None Completed to monitor	None Completed to monitor
Wildlife Habitat Projects	None Completed to monitor	None Completed to monitor	None Completed to monitor	None Completed to monitor
Prescribed Burns	0	1	4	5
Road Restoration / Bridge Replacement	0	3	0	3
Other Projects	0	4	2	6

## Appendix 14 - FY 98 IMPLEMENTATION MONITORING SELECTION CATEGORIES

Selection categories from Database	# Project Units Done FY98	# Project Units monitored FY98	% Monitored
Ground Disturbing Activities	34	12	35%
Projects occurring in Riparian Reserves	145	29	20%
Structures within Riparian Reserves	15	9	60%
Projects in Late Successional Reserves	94	19	20%
Projects in Adaptive Management Areas	21	6	29%
Timber Sales in watersheds w/ <15% Late Successional Forest*	8	4	50%
Matrix Regeneration harvests	14	7	50%
Density Management / Commercial thinning	9	3	33%
Salvage Timber Sales	2	1	50%
Projects in Community Watersheds	72	16	22%
Projects within or adjacent to Special Areas	1	1	100%
Projects which include or are adjacent to special habitats	4	1	25%
Projects in VRM II or III areas	17	7	41%
Projects in Wild & Scenic River Corridors	7	3	43%
Projects in Rural Interface	15	5	33%
Noxious Weed Project	0	0	N/A
Prescribed Burn Projects	16	5	38%
Projects which required dust abatement	2	1	50%

Note: Minimum monitoring requirements in each listed category is 20%. The district exceeded the minimums in numerous categories, primarily due to overlapping applicability (many projects meet several criteria in above table).

\* All in compliance with 15% rule (avoided older stands, salvage, thinning )



**Appendix 16 - Response Frequencies and Distribution by Selected Units -  
 “No” or “Does Not Meet” Responses (See Monitoring Narrative for explanations)**

General Areas of noted questions ☞	Beneficial Use and BMPs			Fish			Riparian		NEPA	Special habitat	LSR salvage	Snags & CWD	Totals
	36	37	38	44	45	46	5	6	7	43	20	31	
Project Name ☞ Question # ☞													
Cascade Streamwatch Project			X		X	X			X				4
Cedar Creek Adaptive Mgt TS	X	X		X									3
Tobe West / Botkin Road Replacement TS	X							X					2
Wildwood Park Repairs							X	X					2
Road Maintenance #13-7-4	X			X									2
Warnick Falls	X									X			2
Callahan Creek Thinning TS	X												1
Sand Creek Thinning TS	X												1
S-line Road Restoration	X												1
Gidget TS Unit #2 (Riparian unit)									X				1
Gidget TS Unit #1 (Regen. Unit)												X	1
Yellowbottom Park Salvage TS#1											X		1
<b>Total</b>	<b>7</b>	<b>1</b>	<b>1</b>	<b>2</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>2</b>	<b>2</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>21</b>

**Appendix 17 - Resident Labor Force, Employment by Industry, Oregon**

					Average 1984-88 Baseline								
		1970	1980		1990	1991	1992	1993	1994	1995	1996	1997	
Civilian Labor Force		864,500	1,295,000	1,362,400	1,491,000	1,508,000	154,200	1,596,000	1,640,000	1,656,200	1,719,700	1,731,700	
Unemployment		61,700	107,000	104,800	82,000	90,000	116,000	116,000	89,000	80,300	101,600	100,900	
Total Wage and Salary Emp.		709,200	1,044,600	1,068,680	1,251,900	1,250,800	1,274,200	1,308,400	1,362,900	1,418,400	1,474,600	1,524,900	
Total Manufacturing		172,300	215,100	203,240	220,300	211,700	209,000	211,700	221,300	229,300	235,800	243,700	
>Lumber & Wood Products (& Paper)		76,200	79,900	75,060	73,200	65,800	63,800	62,700	63,300	61,300	59,800	59,900	
>Other Manufacturing		96,100	135,200	128,180	147,100	145,900	145,200	149,000	158,000	168,000	176,000	183,800	
Total Non-Manufacturing		536,900	829,500	865,440	1,031,600	1,039,000	1,065,200	1,096,700	1,141,600	1,189,100	1,238,900	1,281,100	
>Const. & Mining		30,800	48,800	35,800	54,000	53,000	52,000	55,700	62,900	70,400	79,400	83,500	
>Trans., Comm. & Utilities		48,700	60,500	58,040	64,500	65,200	65,700	66,800	68,900	71,300	73,500	74,100	
>Trade		162,000	255,600	269,680	313,100	314,300	318,700	328,900	344,100	357,000	365,900	377,500	
>Finance, Ins. & Real Est.		36,000	70,000	69,360	80,300	83,200	86,000	84,600	87,800	87,200	91,000	95,100	
>Services & Misc.		112,700	191,400	231,180	296,200	296,900	311,800	328,300	343,200	362,900	382,600	400,500	
>Government		146,700	203,200	201,360	223,500	226,400	231,000	232,600	234,700	240,200	246,600	250,400	

### Appendix 18 - Resident Labor Force, Employment by Industry, Benton County

				Average 1984-88 Baseline									
		1970	1980		1990	1991	1992	1993	1994	1995	1996	1997	
Civilian Labor Force		20,980	32,100	34,854	38,570	38,630	36,100	37,510	39,410	41,250	42,680	42,330	
Unemployment		1,310	2,140	1,618	1,450	1,400	1,480	1,270	1,010	910	1,150	1,050	
Total Wage and Salary Emp.		17,940	26,410	27,602	31,300	31,140	31,550	32,730	34,670	37,100	38,540	39,230	
Total Manufacturing		2,380	4,090	4,732	5,280	5,080	5,310	6,140	7,090	8,130	8,840	9,130	
>Lumber & Wood Products		1,470	1,750	1,378	1,390	1,190	1,110	1,100	1,130	1,010	1,030	1,060	
>Other Manufacturing		910	2,340	3,354	3,890	3,890	4,200	5,040	5,960	7,120	7,810	8,070	
Total Non-Manufacturing		15,560	22,320	22,866	26,020	26,060	26,240	26,590	27,590	28,970	29,700	30,100	
>Const. & Mining		540	570	358	590	560	600	680	800	860	960	950	
>Trans., Comm. & Utilities		660	820	724	750	760	780	860	930	950	940	930	
>Trade		2,740	4,560	4,638	5,390	5,270	5,140	5,140	5,390	5,680	6,010	6,040	
>Finance, Ins. & Real Est.		500	1,030	1,064	940	1,160	1,320	1,330	1,370	1,440	1,400	1,280	
>Services & Misc.		2,280	4,300	5,130	6,400	6,480	6,800	7,200	7,570	8,290	8,600	8,980	
>Government		8,840	11,040	10,950	11,960	11,830	11,610	11,390	11,520	11,760	11,810	11,920	

## Appendix 19 - Resident Labor Force, Employment by Industry, Clatsop County

				Average 1984-88 Baseline									
		1970	1980		1990	1991	1992	1993	1994	1995	1996	1997	
Civilian Labor Force		12,080	15,190	16,606	18,230	17,990	16,580	17,400	17,380	17,280	17,520	17,610	
Unemployment		960	1,400	1,324	1,190	1,190	1,410	1,500	1,100	870	1,110	1,190	
Total Wage and Salary Emp.		9,540	11,450	12,028	13,580	13,300	13,610	13,800	14,140	14,530	14,680	15,170	
Total Manufacturing		3,200	3,010	2,966	3,080	2,800	2,860	2,800	2,710	2,620	2,670	2,610	
>Lumber & Wood Products		980	1,770	1,744	1,990	1,730	510	1,670	1,650	1,600	1,630	1,660	
>Other Manufacturing		2,220	1,240	1,222	1,090	1,070	1,350	1,130	1,060	1,020	1,040	950	
Total Non-Manufacturing		6,340	8,440	9,064	10,500	10,490	10,750	10,990	11,430	11,910	12,010	12,560	
>Const. & Mining		350	450	382	440	470	450	530	570	600	620	620	
>Trans., Comm. & Utilities		560	610	560	540	500	500	490	520	530	500	490	
>Trade		1,770	2,560	3,174	3,860	3,870	3,910	3,990	4,170	4,320	4,290	4,360	
>Finance, Ins. & Real Est.		280	440	472	540	510	520	540	600	590	550	550	
>Services & Misc.		1,430	2,080	2,336	2,800	2,810	2,980	3,040	3,130	3,410	3,520	3,880	
>Government		1,950	2,300	2,140	2,330	2,330	2,380	2,400	2,440	2,460	2,520	2,660	

## Appendix 20 - Resident Labor Force, Employment by Industry, Columbia County

					Average 1984-88 Baseline								
		1970	1980			1990	1991	1992	1993	1994	1995	1996	1997
Civilian Labor Force		10,930	16,630		16,020	17,360	17,520	19,400	20,220	20,640	20,810	21,840	22,240
Unemployment		730	1,660		1,426	1,290	1,360	1,810	1,940	1,340	990	1,340	1,360
Total Wage and Salary Emp.		5,830	8,370		8,210	9,630	9,790	9,570	8,890	8,830	9,090	9,450	9,710
Total Manufacturing		2,450	2,530		2,210	2,390	2,300	2,150	2,170	2,170	2,240	2,290	2,280
>Lumber & Wood Products		2,120	2,010		1,706	1,720	1,610	780	1,390	1,420	1,510	1,470	1,470
>Other Manufacturing		330	520		504	670	690	1,370	780	750	730	820	810
Total Non-Manufacturing		3,380	5,840		6,000	7,240	7,480	7,420	6,720	6,660	6,840	7,170	7,430
>Const. & Mining		240	520		440	470	530	430	390	440	490	520	530
>Trans., Comm. & Utilities		220	530		644	1,390	1,550	1,480	940	680	670	710	690
>Trade		930	1,360		1,470	1,800	1,760	1,760	1,790	1,920	1,940	2,050	2,230
>Finance, Ins. & Real Est.		140	260		268	310	310	330	350	380	390	400	400
>Services & Misc.		490	1,200		1,352	1,420	1,500	1,540	1,410	1,360	1,450	1,530	1,580
>Government		1,360	1,970		1,770	1,850	1,830	1,890	1,850	1,880	1,900	1,960	1,990

## Appendix 21 - Resident Labor Force, Employment by Industry, Lincoln County

					Average 1984-88 Baseline								
		1970	1980		1990	1991	1992	1993	1994	1995	1996	1997	
Civilian Labor Force		10,420	18,130		18,694	19,800	20,510	20,350	20,530	20,990	21,090	21,720	21,430
Unemployment		860	1,610		1,548	1,170	1,180	1,460	1,570	1,270	1,490	1,630	1,860
Total Wage and Salary Emp.		7,300	11,940		12,266	13,890	14,370	15,060	15,090	15,780	16,070	16,670	16,740
Total Manufacturing		1,790	2,160		1,694	1,600	1,730	1,860	1,680	1,630	1,520	1,470	1,310
>Lumber & Wood Products		1,420	1,510		1,178	970	1,070	490	940	890	800	780	690
>Other Manufacturing		370	650		516	630	660	1,370	740	740	720	690	620
Total Non-Manufacturing		5,510	9,780		10,574	12,290	12,650	13,200	13,400	14,150	14,550	15,210	15,430
>Const. & Mining		240	470		386	640	630	570	610	700	790	780	770
>Trans., Comm. & Utilities		380	450		438	430	430	450	450	450	460	520	530
>Trade		1,490	3,250		3,416	4,270	4,440	4,700	4,920	5,050	5,060	5,170	5,280
>Finance, Ins. & Real Est.		410	580		532	670	770	820	900	930	880	850	830
>Services & Misc.		1,330	2,390		3,110	3,290	3,360	3,560	3,660	3,790	4,110	3,950	3,990
>Government		1,660	2,640		2,688	3,000	3,020	3,110	3,110	3,230	3,250	3,950	4,030

## Appendix 22 - Resident Labor Force, Employment by Industry, Linn County

				Average 1984-88									
		1970	1980	Baseline	1990	1991	1992	1993	1994	1995	1996	1997	
Civilian Labor Force		27,510	40,600	40,422	43,840	43,730	44,690	46,590	47,890	49,330	52,210	52,560	
Unemployment		2,360	4,400	4,346	3,570	3,740	4,350	4,450	3,370	3,000	3,650	3,850	
Total Wage and Salary Emp.		20,970	30,570	28,924	33,000	32,520	32,760	33,900	35,740	37,850	39,900	41,160	
Total Manufacturing		9,340	11,070	9,948	10,510	10,020	9,850	10,050	10,620	11,200	11,740	12,390	
>Lumber & Wood Products		5,600	6,280	5,708	5,400	4,910	3,660	4,900	5,010	4,910	5,020	5,100	
>Other Manufacturing		3,740	4,790	4,240	5,110	5,110	6,190	5,150	5,610	6,290	6,720	7,290	
Total Non-Manufacturing		11,360	19,500	18,974	22,490	22,500	22,910	23,840	25,120	26,650	28,170	28,760	
>Const. & Mining		990	1,390	908	1,370	1,550	1,430	1,550	1,770	1,990	2,330	2,490	
>Trans., Comm. & Utilities		1,010	1,360	1,336	1,460	1,430	1,510	1,570	1,620	1,660	1,730	1,760	
>Trade		3,480	5,670	5,916	7,090	7,110	7,300	7,500	7,870	8,110	8,580	8,850	
>Finance, Ins. & Real Est.		720	1,290	1,146	1,150	1,110	1,110	1,220	1,270	1,310	1,410	1,480	
>Services & Misc.		2,290	3,800	4,444	5,830	5,620	5,870	6,120	6,710	7,450	7,780	7,830	
>Government		3,140	5,990	5,224	5,600	5,670	5,690	5,890	5,870	6,140	6,340	6,360	

### Appendix 23 - Resident Labor Force, Employment by Industry, Tillamook County

				Average 1984-88 Baseline									
		1970	1980		1990	1991	1992	1993	1994	1995	1996	1997	
Civilian Labor Force		6,970	9,670	9,020	9,300	9,470	10,090	10,240	10,830	10,930	11,420	11,260	
Unemployment		510	940	864	570	600	690	660	520	550	680	730	
Total Wage and Salary Emp.		4,380	5,980	5,434	6,120	6,210	6,460	6,610	7,070	7,250	7,620	7,670	
Total Manufacturing		1,590	1,610	1,142	1,080	1,060	1,140	1,230	1,320	1,310	1,350	1,340	
>Lumber & Wood Products		1,280	1,090	518	400	420	440	490	560	540	540	520	
>Other Manufacturing		310	520	624	680	640	430	740	760	770	810	820	
Total Non-Manufacturing		2,790	4,370	4,292	5,040	5,150	5,320	5,380	5,750	5,940	6,270	6,330	
>Const. & Mining		70	190	146	190	200	170	190	220	250	260	270	
>Trans., Comm. & Utilities		140	190	260	220	230	240	230	270	280	280	260	
>Trade		760	1,310	1,274	1,650	1,650	1,740	1,740	1,800	1,810	1,980	1,990	
>Finance, Ins. & Real Est.		130	220	182	220	220	240	260	310	320	330	380	
>Services & Misc.		660	960	980	1,240	1,310	1,370	1,400	1,530	1,680	1,780	1,730	
>Government		1,030	1,500	1,452	1,530	1,540	1,560	1,580	1,620	1,600	1,640	1,710	

**Appendix 24 - Resident Labor Force, Employment by Industry, Salem Metropolitan Area (Polk and Marion Counties)**

				Average									
				1984-88									
		1970	1980	Baseline	1990	1991	1992	1993	1994	1995	1996	1997	
Civilian Labor Force		76,300	122,200	126,400	140,300	141,900	146,800	154,600	158,600	159,000	164,500	164,900	
Unemployment		5,600	9,400	9,500	7,600	7,900	9,900	11,000	8,400	7,300	9,400	9,600	
Total Wage and Salary Inc.		55,200	88,300	92,440	108,400	109,000	112,200	116,100	120,800	124,500	128,400	131,700	
Total Manufacturing		10,600	14,300	13,940	15,600	15,300	15,500	15,900	17,300	17,800	17,900	18,000	
>Lumber & Wood Products		2,400	3,500	3,440	3,800	3,600	3,600	3,800	4,100	4,200	4,000	4,000	
>Other Manufacturing		8,200	10,800	10,500	11,800	11,700	11,900	12,100	13,200	13,600	13,900	14,000	
Total Non-Manufacturing		44,600	74,000	78,480	92,800	93,700	96,800	100,200	103,500	106,800	110,600	113,700	
>Const. & Mining		2,600	4,200	3,080	4,800	4,900	4,900	5,300	6,000	6,500	7,100	7,900	
>Trans., Comm. & Utilities		1,900	2,800	2,660	3,000	3,000	3,200	3,300	3,500	3,500	3,600	3,500	
>Trade		11,300	19,200	20,900	23,900	23,700	24,700	25,800	26,400	27,400	27,600	27,900	
>Finance, Ins. & Real Est.		3,100	5,600	5,320	6,000	6,000	6,100	6,500	6,700	6,500	6,500	6,600	
>Services & Misc.		7,900	14,800	18,000	23,300	23,900	25,400	26,400	27,700	29,000	30,100	31,100	
>Government		17,800	27,400	28,520	31,800	32,200	32,400	32,800	33,200	33,900	35,700	36,700	

**Appendix 25 - Resident Labor Force, Employment by Industry, Portland Metropolitan Statistical Area  
(Clackamas, Multnomah, Washington, Yamhill Counties)**

				Average 1984-88									
		1970	1980	Baseline	1990	1991	1992	1993	1994	1995	1996	1997	
Civilian Labor Force	na	na	619,920	686,000	699,100	874,500	907,100	936,500	958,600	1,001,900	1,025,700		
Unemployment	na	na	40,100	29,000	33,000	56,100	54,300	40,300	35,600	45,400	44,100		
Total Wage and Salary Emp.		357,600	520,210	538,480	638,600	640,600	745,000	766,700	802,100	839,600	879,000	918,200	
Total Manufacturing		77,920	106,160	93,600	104,800	104,000	121,100	124,100	129,900	137,200	142,000	147,500	
>Lumber & Wood Products		11,650	13,300	11,640	11,500	10,500	86,000	16,300	16,400	16,400	15,900	15,800	
>Other Manufacturing		66,270	92,860	81,960	93,300	93,500	35,100	107,800	113,500	120,800	126,100	131,700	
Total Non-Manufacturing		279,680	414,050	444,880	533,800	536,600	624,000	642,600	672,200	702,400	737,000	770,700	
>Const. & Mining		15,980	22,830	19,380	29,800	28,600	34,100	35,600	40,500	45,400	52,100	55,300	
>Trans., Comm. & Utilities		28,590	34,810	34,140	38,000	38,400	44,000	44,300	45,600	48,400	50,800	52,200	
>Trade		89,720	134,210	142,780	165,100	165,600	188,100	193,200	203,600	210,800	218,300	228,300	
>Finance, Ins. & Real Est.		24,160	44,100	44,340	51,700	53,600	59,900	59,300	61,500	60,200	63,600	66,700	
>Services & Misc.		65,050	104,490	128,520	165,300	164,500	191,900	203,300	213,000	227,500	238,600	252,400	
>Government		56,180	73,610	75,760	83,900	85,900	10,600	106,900	108,100	110,100	113,600	115,900	

## **APPENDIX 26 - Modifications Being Considered for Survey & Manage and Protection Buffer Guidelines**

On November 15, 1998, the Forest Service and Bureau of Land Management (the Agencies) filed a Notice of Intent to prepare an Environmental Impact Statement (EIS) in the Federal Register. During the four years since the Record of Decision (ROD) was published, the Agencies have acquired considerable information about species' abundance and survey feasibility that prompted consideration of adjustments to the Survey and Manage and Protection Buffer provisions. The Agencies have begun a process to determine a course of action to revise the Survey and Manage and Protection Buffer standards and guidelines to increase the efficiency and consistency of these mitigation measures.

The Northwest Forest Plan stated that the standards and guidelines must have the flexibility to adapt and respond to new information, and that an adaptive management process would be implemented to maximize the benefits and efficiency of the standards and guidelines (ROD, pp. E-12 - E-13). The ROD anticipated that, as experience was gained in the implementation of this mitigation measure, the Agencies would need to make changes in Survey and Manage provisions, including changing the schedule, moving a species from one survey strategy to another, or dropping this mitigation requirement for any species whose status is determined to be more secure than originally projected (ROD, p. 37). There is a need to clarify the process by which the Agencies make changes to the Survey and Manage provisions.

As stated in the Northwest Forest Plan, our goal is to continue the current Survey and Manage strategy on Federal lands -- a combination of managing known sites and increasing our information base through surveys -- but making the process more efficient and consistent. At this initial stage, the Agencies' proposed action is to:

- revise Survey and Manage standards and guidelines and survey strategy classifications of species; make the standards and guidelines clearer and more easily understood;
- discontinue the Protection Buffer standards and guidelines and cover those species under the Survey and Manage standards and guidelines;
- provide a detailed process and clearer criteria for making changes to species' status in response to new information; and
- recategorize some Survey and Manage species through an initial use of the above process.

This initial proposed action may be refined or modified based on scoping from within the Agencies and from the public. The Agencies are tentatively planning to consider a range of alternatives that would include no action (i.e., making no changes or clarifications to the current mitigation strategy) and mitigation strategies with varying emphasis on surveying to gain new information on managing occupied sites.

We are preparing an EIS to analyze the effects of the proposed action and alternatives. We expect to release the Draft EIS for public review in April 1999. In the 90 days following release of the Draft EIS, we will accept your comments on the proposed action and alternatives and our assessment of the effects. A final EIS will be prepared and the decision regarding this action will be made approximately October 1999.